DISQUISITION

OF THE

STONE *and* GRAVEL.

A

DISQUISITION

OF THE

STONE AND GRAVEL,

AND OTHER DISEASES

OF THE

KIDNEYS, BLADDER, &c.

By S. PERRY, Surgeon, London.

Plus vident Oculi quam Oculus.

THE FIFTH EDITION.

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M,DCC,LXX,VII.

TO THE

ROYAL COLLEGE

OF

PHYSICIANS,

LONDON.

GENTLEMEN,

IT is uſual for authors to inſcribe their writings to ſome diſtinguiſhed perſon, from whom they expect protection againſt the ignorance, or malevolence of the world: and, as I am fully perſuaded there is no authority whoſe award, from an appeal in the preſent caſe, can be more deciſive than yours, I chearfully ſubmit the merit of this little tract to your tribunal, from a conſciouſneſs, that, without your approbation, the concurrence of an individual could have no weight.

As the Doctrine of the Cauſes of the Stone is as new as the Remedy, I am certain it will undergo various teſts, which, in a manner, ſubjects it to approbation or cenſure, according to the intereſts or inclinations of individuals: If, therefore, from a candid examination (on which I rely with the greateſt

plea-

pleaſure,) it ſhould meet with your countenance and ſupport, I ſhall have nothing to fear from the cavils and criticiſms of the reſt of the world.

In reſpect to the latter part, which treats of the *Cure* of the *Stone*, I flatter myſelf the world will do me the juſtice to aſcribe to me the merit of the diſcovery, particularly as it is ſhewn that I have not dealt in conjectures, but in matters of fact.—Hitherto Lithotomy has been neceſſarily called in, becauſe no real Cure of the Stone had been pointed out. When, therefore, the following facts ſhall be known to you, it is not to be doubted but your humanity will with-hold *that* operation, while a cure is likely to be had in a ſafer and eaſier way.

The praiſes which were given to thoſe phyſicians who ſuſpended the *operation* in one of the caſes annexed to this treatiſe, will be better conceived than deſcribed, eſpecially as at that time, the tide of prejudice was ſtrong againſt the uſe of the *remedy:* nor can I, in this place forbear ſaying, that the merit due to that Phyſician who oppoſed it in a *late* inſtance, (when an eminent Surgeon conteſted for it) exceeds every encomium.

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The only favour I contend for is, that ſo far as you ſhall find this treatiſe uſeful, you will be pleaſed to patroniſe and recommend it.—The advantage that may accrue from your recommendation is not merely ſuch as reſults to an author, with regard to works of literature: In the preſent inſtance, it ſerves to diſtinguiſh the author from an *empyric*, under which appellation the favourers of any noſtrum are too likely to fall, and with which perſons, I am ſorry to ſay, the world (particularly London) too much abounds.

I flatter myſelf it is unneceſſary to ſay more, unleſs it be to aſſure you, that no one has a greater veneration and reſpect for the profeſſion, than,

Gentlemen,

your moſt obedient,

humble Servant,

S. PERRY.

London, Feb. 18. 1777.

PRE.

PREFACE.

IN the whole liſt of diſeaſes, to which the human frame is ſubject, none is more dreadful in its conſequences to the patient than the *Stone*. The deprivation of reaſon may be more ſhocking to the friends of the afflicted; his own corporal feelings cannot be greater:—The more ſudden diſeaſes, as fevers, are leſs ſeverely felt; the patient not being acquainted with his own danger, though he ſhould be on the brink of the grave. In this diſeaſe, he ſuffers a mixture of pain and impriſonment, which he has been made to dread is for life.

The *Stone* has been long deemed the *opprobrium medicorum*, and has been holden as a ſentence paſſed upon all thoſe who ſhould labour under its influence; the only appeal from which was ſaid to be to the knife. I ſhall not pretend to ſay what proportion have fallen who have ſought refuge in the operation; however, to the honour and credit of our ſurgeons be it ſaid, that lithotomy in no country was ever more judiciouſly performed than in this: notwithſtanding which, if we conſider the number of perſons who are even excluded from the operation; that the ſeaſon of the year, age, and conſtitution of the patient, muſt all conſpire to render it ſucceſsful; we ſhall ſtill find its evils but palliated thereby in a ſmall degree:—nay, after all, however proper the ſubject may be deemed for undergoing the operation, no one will infer from thence, that his life is not in *imminent* danger; and though he ſhould ſurvive the operation, he is not inſured from a future attack. On

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the contrary, in extracting the ſtone, nothing is more common than its giving way, and crumbling under the forceps; or, indeed, there may have exiſted ſeparate *nuclei* in the bladder before: in either of which caſes, a part may elude the ſearch of the ſcoop, and begin a new concretion, and ſo lay him liable to the ſame diſeaſe in its aggravated ſtate: for at beſt, there ſeldom fails to enſue an uneaſineſs in the part itſelf, from the contraction occaſioned by the cicatrix of the wound.

Now although it is not poſitively aſſerted, that the ſubſequent remedy will do more than remove the diſeaſe when preſent, yet no one will object to the probability of its preventing it afterwards, when he conſiders the nature of its operation. If we remove a diſeaſe, by ſeparating or deſtroying the principles on which that diſeaſe is formed, the cure will undoubtedly be more permanent, than when the effects only are taken away—(*ſublata cauſa tollitur effectus.*)

There is nothing ſo difficult to be ſubdued as maxims, or doctrines, which are formed on the baſis of common prejudices. There are, no doubt, at this time, perſons who deny the poſſibility of diſſolving a ſtone in the bladder; averring that whatever diſſolves a body of a texture ſo hard, muſt of courſe deſtroy thoſe veſſels through which the *menſtruum* is convey'd. I do not think it neceſſary to obſerve, how far they thereby ſhew their total ignorance of the anatomy and economy of the human body:—by cheriſhing ſuch doctrine, they alſo deny the well known property of medi-

cines

cines acting ſpecifically or electively. Are there not medicines which ſtrongly affect the laſt ſecretion of the body without being felt in any manner by the ſtomach which firſt receives them? as in the caſe of cantharides. If mercury be rubbed into the ſoles of the feet, will not its effects be found firſt in and near the region of the head, particularly in the ſaliva?

In the courſe of the following Treatiſe, or rather in the laſt Chapter of it, will be given poſitive proofs of the certainty of diſſolving ſtones in the bladder, by a medicine in itſelf as ſafe as the common fluids we drink.—They are facts that cannot be likely, in the leaſt, to ſtagger the faith of any, being authenticated in the moſt ſatisfactory manner.

The only colour of a reaſon for pronouncing the Stone incurable was, that it had been repeatedly tried without ſucceſs, by various artiſts, who had made it their particular ſtudy to analyze human calculi.—After acquainting the world that they conſiſted of ſuch and ſuch principles, they immediately made experiments upon them *out* of the body by *menſtrua*, which, however guarded, could never ſafely be truſted in the *habit*, unleſs reduced to a degree that rendered them wholly *inactive*.

Every one, I believe, will allow, that nothing is more common than a tranſition from the moſt pliant credulity in the world, to a ſtubborn denial of conviction.—The particular ſcience of phyſic has undergone the greateſt revolutions and changes.—If we candidly

and in an unprejudiced manner, examine the merits of the ſeveral reputed lithontriptics, we ſhall find, that there was no more reaſon for extolling them than there was afterwards for pronouncing the Stone abſolutely incurable.

It has been already ſhewn, that a medicine, which had the power of diſſolving a ſtone *out* of the body, carried with it pretenſions ſufficient for being inwardly taken: when it was found to be too active in its firſt ſtate, perhaps, to be borne, it was diluted to a degree that at laſt laid its powers as a diſſolvent entirely at reſt; ſo that the very principle or quality that made it offenſive to the conſtitution was that ſole one which diſtinguiſhed it as a diſſolvent. There is not a corroſive fluid in the whole chymical tribe that is not in ſome degree a diſſolvent of the Stone; yet no one in his ſenſes would infer that they are proper remedies for being inwardly taken.

A candid inveſtigation of the moſt reputed lithontriptics and diſſolvents ſhall be given in the courſe of this work, wherein the reader will be reconciled to the manner in which the authors of them got ſo much money, and why their medicines, after making ſo much noiſe in the world, ſhould fall into diſrepute.

It is, I believe, already allowed, that a cure for the Stone is not to be found among thoſe medicines that operate by dint of a ſuperiour power only: there

there muſt be an affinity between the *menſtruum* and the *ſubſtance* to be diſſolved, a *ſpecifical* and *local* operation on the ſtone or the urine itſelf, otherwiſe we might as well pretend to find a cure in *aqua fortis, volotile ſpirits of ſal ammoniac, &c.* for either of thoſe will deſtroy one of the principles of the Stone, and may therefore be called *lithontriptic.* ——

Certain I am, that no *real* ſolvent will ever be found in thoſe medicines which operate merely by their corroſive qualities. There muſt be an affinity, not a conteſt, raiſed between the Solvent and ſome one or more of the Principles which generate the Stone.—— The *latter* expedient will more effectually diſſolve calculi *out* of the body, but the *former* one only can be relied on for *internal* uſe.

As this pamphlet is calculated for the inſtruction of the Patient, not improvement of the Artiſt, I ſhall therefore wave all notice or remarks on learned diſputations and chimerical hypotheſes, and confine myſelf to mere matters of fact. It is not the fame of a diſcovery which flatters me, but the pleaſing hope of rendering my hours uſeful, in relieving my fellow creatures in diſtreſs.

It may be alledged againſt me as an imputation, that I have with-holden the recipe from the public: to which I anſwer, that I think it will be deemed but reaſonable that I ſhould be repaid for the great expence I

have been at in fitting up an elaboratory for its preparation, *&c.* I hope I have taken ſufficient care that the receipt will never be loſt to the world; and to avoid the appearance of mere ſelf-intereſt, the faculty ſhall be ſupplied with it at a price even leſs than they could prepare it themſelves: and no part of the community ſhall be excluded its benefit, as all paupers ſhall receive it, upon being recommended by any of the faculty, or other reputable perſon.

London, 18. Feb. 1777.

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THE CONTENTS.

CHAPTER I.

Containing a ſhort anatomical Deſcription of the Parts moſt nearly concerned in the Diſeaſe.

SECTION I. Of the Kidneys - - Page 1
SECT. II. Of the Ureters - - 3
SECT. III. Of the Bladder or Veſica Urinaria 3
SECT. IV. Of the Urine - - 5

CHAP. II.

SECT. I. Of the Gravel - - 7
SECT. II. Of the ſymptoms of the Gravel in the Kidneys - - 9
SECT. III. Of the Gravel in the Bladder 10
SECT. IV. Of the Cure of the Gravel in both Bladder and Kidneys - - 11

CHAP.

* CHAP. III.

	Page
SECT. I. Of the Stone - -	16
SECT. III. Of the Cauſes hitherto aſſigned of the Stone - - -	18
SECT. IV. Inferences drawn from the laſt Section	23
SECT V. Of the real Cauſe of the Stone -	30
SECT. VI. Of the Stone in Children -	36
SECT. VII. Of the ſymptoms of the Stone	37
SECT. VIII. Of the Cure of the Stone -	43

* CHAP. III.

Of Soaps and Lixiviums - -	47
Remarkable Caſe of a Perſon who had taken Soap and Lime Water - -	49
Ditto, of another - -	53

** *N. B.* The Sections in this Chapter, were, by miſtake, printed I. III. IV. &c. inſtead of I. II. III. IV. &c. and the Chapters I. II. III. III. IV. &c. in lieu of I. II. III. IV. &c. on which account it was thought proper to continue them ſo in the Contents.

CHAP. IV.

Page

Of a newly discovered Remedy, or Specific Solvent for the Cure of the Stone - 57

CHAP. V.

Of the different Degree of Density in Stones 61

CHAP. VI.

Of Carunculæ, and Excrescences of the Passages 66

CHAP. VII.

Of the Regimen in the Cure of the Stone 69

CHAP. VIII.

A few Remarkable Cases of the Efficacy of the Specific Solvent in the Cure of the Stone 76

1. The Case of John Bennett, Esq; of New Ormond Street, London. - - 77

2. The Case of the Rev. Mr. Fowke Moore, of Dungannon, Ireland - - 82

3. The Case of Mrs. Barnes - 87

4. The Case Mrs. Love - - - 92

5. The Case of Mr. W. Harpur - 94

6. The Case of Mr. Savage - 97

7. The Case of the Right Honourable Lord George Germaine - - 99

CONTENTS.

CHAP. IV.

Page

Of a newly discovered Parcely, or Species

Solvent for the Curate the Same 57

CHAP. V.

Of the different Degrees of Probity in Secrets 62

Of Credulity, and Incredulous of the Times 65

Of the Regimen in the Case of the Stone 69

CHAP. VII.

A few Pages in the Life of the Stone 76

Specifications in the Light of the Stone

The Case of the Stone

Of the Case of the Stone

The Case of the Stone

The Case of the Stone

The

A DISQUISITION OF THE STONE AND GRAVEL.

CHAP. I.

SECT. I.

BEFORE I treat of the Stone and its concomitant ſymptoms, it will not be thought improper by ſome of my Readers to give a ſhort, anatomical deſcription of the parts moſt nearly concerned in that diſeaſe. And firſt,

OF THE KIDNEYS.

A human body contains two kidneys, both placed in the abdomen, or lower belly: the right is ſeated under a part of the liver, the left nearly between the ſpleen and muſculus lumbaris, both under the meſentery or duplicature of the peritoneum.

In man, the right kidney is ſomewhat lower than the left; but in quadrupeds, the left is generally ſo.

They have each two membranes, the exterior of which joins them to the loins and diaphragm, and are faſtened to the bladder by the ureters: they are of a glandulous ſubſtance, interſperſed with an infinite number of ſmall pipes or canals, and in figure much reſemble a bean: whence the name *Kidney Bean.*

They receive their blood-veſſels from the vena cava and aorta by the emulgent arteries, whoſe numberleſs ramifications extend thro' the whole ſubſtance of the kidneys, and terminate in glands of a globular form, which compoſe the cortical part of the kidney, of about half an inch thick, and of a liver colour.

From each of theſe glands iſſue out the tubuli belliniani, which extend themſelves toward the pelvis, or internal cavity of the kidneys, and form the papillæ; adjoining to which, is the canal called fiſtula membranacea, thro' which the urine is conveyed, that it might be diſcharged by the ureters into the bladder.

The blood remaining after the ſecretion of urine, is remitted to the heart by the minute capillary veins, which ariſe from the extremities of the arterial branches, being incloſed in the ſame capſular with the artery, that terminates at the cava.

There

There are likewiſe a multiplicity of muſcular fibres in the ſtructure of the kidneys, which demonſtrate, that they are of other uſes than that of ſecreting the urine; *viz.* for the ejection or expulſion of any concreted ſubſtance that might be lodged therein.

SECT. II.

OF THE URETERS.

There are alſo two ureters which pierce the ſubſtance of the kidneys, and convey the urine from their cavity into the bladder: they are generally of the ſize of a gooſe-quill; are membranous and fiſtulous, and of unequal diameter; and though they are capable of great dilatation, yet obſtructions of them frequently happen, and are of infinite conſequence to the patient, occaſioning a ſuppreſſion of urine; and if either be afflicted, a ſtrangury will commonly enſue.

SECT. III.

OF THE BLADDER, or VESICA URINARIA.

The bladder is compoſed of three membranes; the exterior common from the peritonæum, the other two proper to themſelves: the middle one is made up of carnous fibres, longitudinal and circular: by

the action of the longitudinal the fund of the bladder is preſſed forward towards the os pubis, from the lower part of which they ariſe, as well as from the fore part of the proſtatæ; while the circular ones, by leſſening their dimenſions, excite and procure the diſcharge of the urine.

The inward membrane is nervous, and of an exquiſite feeling: hence is accounted for the violence of the inflammation when the urine is become acrimonious by being too long retained, it being proved to be the moſt putreſcent of all known liquors.

The bladder would be ſubject to many more accidents, were it not defended on all ſides with a vaſt number of glands, which continually emit a mucus, that ſerves to blunt the urine of its ſalt: when this natural mucus is deficient, a diſeaſe of another nature is produced, which can be remedied only by balſams and mucilages taken freely off to ſupply the want of it.

It is a kind of reſervoir, which receives the urine of the kidneys, that it might not be evacuated continually, and againſt our conſent; as I once obſerved in a boy who had no bladder, and who uſed to beg among the Faculty.

For the more eaſy emiſſion of the urine, nature has furniſhed it with a ſufficient excretory duct, which is the urethra; and being tender, like the inward membrane of the bladder, has lined it in the ſame manner with glands, which emit a ſlimy mucus

that

that alſo defends the paſſage from being excoriated by the urine.

Both the bladder and urethra derive their veins and arteries from the epigaſtrics and iliac nerves, and from the pelvis of the abdomen; and, by communication or ſympathy, are often equally affected in an acute inflammatory diſeaſe.

As from the unnatural temperature or ill condition of the urine, proceed the various diſeaſes of inflammation, ſtones, gravel, and all ſabulous concretions; I ſhall treat briefly of its conſtituent principles, that its nature may be better underſtood by thoſe who are not converſant therein.

SECT. IV.

OF THE URINE.

That the urine is an elementary fluid, or rather, made up of elements, is evidently demonſtrated by the frequent experiments of our Chymiſts upon it, whence they extract an inſipid lymph, volatile ſpirit, an acid ſaline matter, ſome oil, and a fixed earth, which yields the Sediment, perceived after it has ſtood a little time in the urinal.

Indeed, whoever has a turn for natural philoſophy may perceive that without the help of chymiſtry, ſince its principles are contained in thoſe mixtures which ſerve for our aliment, and participate

alſo

alſo of the four elements: and the more one of theſe is predominant in the aliments we take moſt freely of, the more is the urine impregnated with its principles; which clearly evinces the neceſſity of laying down a proper regimen in the cure of the ſtone, or other complaints of that kind.

There is a ſingular property in the urine, that many medicines affect it before the ſtomach, which firſt receives them: or, indeed, it may be properly enough ſaid, without any effect at all in the ſtomach, inteſtines, or blood itſelf, from which the urine is ſecreted.

We find that a bliſter will induce a dyſury and inflammation of the neck of the bladder, by rendering the urine acrid with its ſalt, when perhaps no other part feels any inconvenience.--The ſmell of paint, from the turpentine in it, will produce the like in a milder degree, and gives the urine, when firſt made, the fragrance of violets: all theſe but little affect the blood or its circulation, except when the pain becomes a ſtimulus.--On the contrary, mercury, which ſo ſuddenly and infallibly heightens the momentum of the blood, and quickens the circulation of the juices, is not in the leaſt obſerved in the urine, either in taſte, ſmell, or colour.—This reflection gave me at firſt, no ſmall hopes of ſucceeding in my wiſhes for diſcovering a Solvent, whoſe operation ſhould be ſpecifically confined to the urine only, acting either by diſuniting its earth and ſaline parts, and volatiliz-

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ing its ſalt, or, by preventing the urine from partaking of ſome of thoſe qualities, deſtroy the adheſion, and cauſe the ſtone to fall into a white friable powder; unleſs it ſhould be of the grape kind, in which caſe it would be diſcharged in little red pieces of a globular figure.--Almoſt all human calculi, when deprived of their fixed air, grow paler in colour, and become chalky and crumbly, as may be noticed in theſe little globes in the places broken from the Congeries.

CHAP. II.

SECT. I.

OF THE GRAVEL.

The Gravel being the prediſpoſing and common foundation of the Stone itſelf, particular regard ſhould be had to its indicating Symptoms, not only to be certain when it is preſent, but alſo to be directed in the method of cure; as, while it is in this infant ſtate, it is eaſily aſſailable, and may ſometimes be expelled the body with a few doſes of medicine.

When we have conſidered the nature of the Fluids of the human body, particularly the Urine, and alſo, that their circulations and progreſſive motions may be retarded by various means and accidents,

no

no wonder that the latter will depoſit, in the part where it reſts, a gravelly ſediment, which it never fails to do when out of the body. Heat being generated and maintained by agitation and continued motion, it is evident, that when this is impeded, the fluids will grow cooler, and be more liable to let fall their earthy part. Violent cold is productive of the Gravel; and we find it affect different conſtitutions various ways, and even the ſame conſtitution at different times. It contracts the pores on the ſurface of the body, and checks perſpiration, and all the other ſecretions and excretions; by which means the fluids become more acrimonious, and produce either Fever, Diarrhœa, Gravel, &c. according as the matter is thrown into the Blood, Inteſtines, or Kidneys.

Laxity and debility of thoſe parts concerned in the ſecretion of the Urine, will alſo be another cauſe of the Gravel; for the Kidneys as well as the bladder, by their variety of muſcular fibres, are ſubject to contraction and diſtenſion: if, therefore, their muſcular action be enfeebled, they are leſs capable of diſlodging and ejecting any concretions thrown into them, but being ſuffered to remain, they increaſe by their well known property of attraction and affinity, until their irritation produce a fit, as it is called; and if the Gravel be too large to be expelled by the Ureters, a Stone will be the conſequence.

SECT. II.

OF THE SYMPTOMS OF THE GRAVEL IN THE KIDNEYS.

The ſymptoms of the gravel are various, according to the degree of violence of the diſorder itſelf; but the moſt common are a dull obtuſe pain in the kidneys, or in that part of the loins where they are attached: ſometimes the pain is very acute, accompanied with bloody water, which if retained any time in the bladder, becomes of a darker or Coffee colour; a nauſea and vomiting will likewiſe be excited; frequently a total ſuppreſſion of urine from ſpaſms induced by the irritation of the particles of gravel in the kidneys; and the pain will extend itſelf along the ureters to the bladder, in which caſe an uneaſineſs is felt in the ſide, particularly after a full meal, or much exerciſe, or from any diſtortion of the body, riding on horſe-back, &c. The kidneys, as well as all other organical parts, are ſubject to inflammation, reſolution, and ſuppuration; which laſt is not abſolutely incurable, but may ſometimes be remedied by balſams that deterge and diſpoſe to heal the parts, when the matter has been diſcharged by detergents. Balſams of capivi, turpentine, &c. are of ſervice here; likewiſe, drinking freely of diluting mucilaginous drinks, as barley-water, marſh-mallow tea, and others.

There is a ſpecies of rheumatiſm, called Lumbago from its affecting the region of the loins, which

has been frequently miſtaken for a nephritic complaint; but the former may be diſtinguiſhed from it in this, that the patient has no uneaſineſs in making water, but may induce a pain by bending his body forwards, as in that caſe the muſcles are put on the ſtretch: on the contrary, if it be the gravel, his pain will neither be increaſed nor diminiſhed by it.

SECT. III.

OF THE GRAVEL IN THE BLADDER.

The ſame complaints, with a little variation, will affect a perſon when the gravel is in the bladder; and it will ſometimes be felt in the latter, when the kidneys are quite free from it, in which caſe the inclination to make water is frequent, and in ſmall quantities: at other times a ſtrangury is the conſequence of the ſtimulus of the earthy particles againſt the ſides of the bladder, to which it is liable from the fineneſs and number of its nervous branches.

To prognoſticate with certainty in the gravel, ſtrict regard ſhould be had to the urine itſelf; for when it has ſtood ſome time without agitation, the calcarious matter will be depoſited in the urinal, eſpecially if made after the abatement of the pain.

It is neceſſary to be particularly attentive to the cure of the gravel, and other calculous obſtructions of the kidneys and urinary paſſages, as, by that mean, the formation of a ſtone may be prevented.

SECT. IV.

OF THE CURE OF THE GRAVEL IN BOTH BLADDER AND KIDNEYS.

The cure of the gravel is of a two-fold nature. The firſt and moſt ſimple is that of relaxing the veſſels, and increaſing their diameters, that the repeated efforts of nature may diſlodge the concretions: the ſecond is by abrading, corroding, and leſſening the calculous matter, and procuring a diſcharge of it by ſuch medicines as ſtimulate and excite to action the veſſels that retain it.

The firſt intention of cure is obtained by copious bleeding, laxative purges, and oily medicines; but above all, repeated warm bathing; which laſt, though not of itſelf ſufficient to effect a cure, or to be uſed without previous preparation, is ſtill a great auxiliary, for it increaſes the action and circulation of the fluids, and abates the rigidity and tenſion of the ſolids, by which means the obſtructing matter is propelled into the ureters, and from thence into the bladder, whence it is evacuated with the urine. Theſe are the moſt natural means of obtaining relief when the veſſels themſelves are in their natural ſtate, and the gravelly matter is not increaſed to ſuch a ſize as to diſtend the containing part, and become too large to be expelled, without rupturing, or otherwiſe endangering the veſſels as it paſſes along. A piece of calculus, nearly the ſhape of a barley corn,

will ſometimes be paſſed lengthwiſe into one of the ureters, and there changing its poſition, will, by its rough angular corners, bring on ſuch an hemorrhage of blood, as to endanger the life of the patient; which caſe has, I doubt not, been obſerved by many. This circumſtance happened to a patient of mine ſome time ago, to whom I was called three hours before he died. He had never complained much of the gravel or ſtone; and as he was at that time incapable of anſwering any queſtions (the loſs of blood having thrown him into a deliquium) it was requeſted, after his death, that he might be opened, when it appeared, that a piece of ſtone about four grains in weight, had lacerated the inſide of the left ureter, and brought on the diſcharge of blood which occaſioned his death: for when it had inſinuated itſelf into the ureter, it became a ſtimulus, and induced ſuch convulſive twitches and contractions in the part as proved fatal to him.

It therefore behoves every perſon who has the ſlighteſt complaint of the gravel, to have recourſe to thoſe curative means, which, at this time of the diſeaſe, are almoſt infallible: if it be not then attended to, it is a hundred to one but it will accumulate to a ſtone; for if it be confined, the fleſhy part readily gives way to a body of a nature ſo much harder than itſelf, and ſuffers it to augment. In this ſtate, ſtimulating medicines will but increaſe the diſaſter, as the calculus is already too large to be expelled; it muſt therefore, by diſſolving medicines, be reduced to the ſize of the excretory tube before it can bediſcharged.

Stimulating

Stimulating diuretics are, nevertheleſs, very ſerviceable in the moſt ſimple ſtate of the gravel, when the bladder, by its laxity and inertneſs, has ſuffered the urine to ſeparate and depoſite its earthy part therein. The common diuretics of the ſhops, and ſuch as have been moſt frequently uſed in the gravel, are the ſpiritus nitri dulcis, ſoap, lime-water, and all turpentine preparations.

To diſtinguiſh with preciſion, whether our patients complaints proceed from gravel or a real ſtone, is the nice point on which all our ſucceſs in the cure depends. If our prognoſtications herein be juſt, we are not only able the moſt effectually to preſcribe for the relief of them, but we are prevented from taking a courſe that would be highly injurious:—for it has been obſerved, that all ſtimulants do miſchief where the calculus is too large to paſs. Every one's reaſon informs him, that if the calculus be driven forward, the conſequence muſt be a laceration in the part, and perhaps a ſucceeding ulcer. The oil of juniper, which abound in gin, has frequently done miſchief in ſuch a ſituation; nay, honey is exceedingly diuretic, and ſhould be avoided, except in caſes where the offending matter is ſmall enough to be driven out through the paſſage.

Seeing, therefore, that a proper treatment of the gravel may prevent a confirmed ſtone and its conſequences, I could wiſh to be particular in my directions herein. Tho' the ſymptoms of the gravel are different, according to the ſeat of the diſeaſe; yet the

cure

cure ſhould be attempted exactly in the ſame way, whether in the kidneys or bladder. I would recommend a doſe of Rochelle ſalts and manna, as a purge to precede the other remedies. Sweet ſpirits of nitre, taken in a decoction of Marſh-mallow roots, is one of the moſt agreeable diuretics; and if continued night and morning for ten days, will do as much ſervice as any of that claſs, and is attended with none of thoſe inconveniencies to which ſoap, lime-water, and turpentine are liable. But it muſt be particularly obſerved, that, whenever the water is in the leaſt bloody, or coffee-coloured, no reliance can be made on any of the before-mentioned diuretics; but recourſe muſt be had to the Specific Solvent, hereafter recommended for the Stone.

Although bloody urine is ranked among the ſymptoms of the gravel in the kidneys, yet it is always to be doubted whether it be not rather the conſequence of a ſtone; in which caſe, I would adviſe every one to avoid ſtimulating diuretics or forcing medicines: for altho' ſuch ſymptom may ſometimes be the conſequence of looſe gravel; yet, I dare ſay, nine times out of ten, it is really that of a ſmall ſtone. Indeed, at all times the ſymptoms in the kidneys, whether of ſtone or gravel, run ſo much into each other, that it requires a very minute attention to diſcriminate them.—Happy it is for the afflicted in theſe uncertain diſeaſes, that a medicine is diſcovered which is equally ſerviceable in both: for there cannot be a more lamentable ſtate than a man under

under the perplexity of two diſeaſes, where the treatment of the one ſhould be diametrically oppoſite to that of the other.

The regimen of the gravel, whether of the kidneys or bladder, ſhould be adapted to the urgency of the complaints. A cooling diet is always proper; and if the urine be hot, and high coloured, plentiful draughts of balſamic liquors ſhould be taken; ſuch as veal broth, barley water, marſh-mallow tea, and capillaire and water, or orgeat. It will alſo be neceſſary to attend minutely to the ſediment in the urine, whether it be of an earthy or ſlimy kind: if of the latter, it indicates great irritation. In this caſe, violent motion ſhould be avoided; and large draughts of the above diluting liquors be taken every three or four hours till it abate. If the gravel be evacuated by diuretics, it is generally roundiſh and of a bright reddiſh colour; but if it be diſcharged in conſequence of taking the Solvent it will be finer, and of a dull whitiſh colour; and ſometimes of a mixed nature, inclining to a brown.

Let it be obſerved, that exerciſe is always to be recommended where the gravel is evacuated without pain:—but if irritations, diſcoloured water, or pain, be attendant on the diſcharge, reſt muſt be indulged, and the body kept cool.

CHAP. III.

SECT. I.

OF THE STONE.

The Stone, called in Latin, *Calculus*, from its reſemblance of ſtones of the earth, is found by a chymical analyſis, or decompoſition, to conſiſt (as well as urine,) of an earth, air, oil, and volatile ſalt; and that ſuch ſubſtances are capable of forming bodies of the hardeſt texture, by attraction or adheſion, is clearly proved in the making of glaſs, which is a combination of earth (or ſand and ſalt) with fixed air, which is proved to be the cement of the Stone. They are of very different degrees of denſity and coheſion; ſome being ſo looſe and friable as to crumble to pieces between the fingers, while others have been taken from the body, of ſuch a compact and flinty nature, as to have ſtruck fire in colliſion with ſteel. From this conſideration, the violence of the ſymptoms of the ſtone muſt be various, ſome yielding to a few doſes of medicine; whereas in others, it is neceſſary to continue it for a great length of time to diſſolve them.

From the monſtrous increaſe of ſome ſtones in a ſhort time, and the ſlow growth of others for many

many years, we may be perſuaded, that the conſtitution varies exceedingly at different periods; and from appearances of moſt ſtones, when artfully ſawed through, we may infer, that this variation ſhews itſelf not only in the quantity of gravel added to the ſtone, but in the quality alſo:—So that a red, uniform ſtone of an inch diameter may, perhaps, at half that ſize, have been a ſmooth, white one;—at a quarter, a brown mulberry one; and ſo on, at different times altering in its ſpecies.—Hence, from the appoſition of different coloured gravel, ariſes, for the moſt part, the laminated appearance of the ſtone; though ſometimes the laminæ are very nearly of the ſame colour and compoſition, and in this caſe, their formation ſeems to be owing to the want of accretion in the ſtone for a certain time, in which interval, its ſurface, by rubbing againſt the bladder, and by its attraction from the ſtream of the urine, becomes ſmooth and compact: ſo that when more freſh looſe gravel adheres to it, its different denſity in that part will make the ſtreaks we ſee in a ſection of the Stone, which are only the outſide ſurfaces of each Lamina.

It is no wonder that ſtones thus generally form in the kidneys, ſince the diſpoſition of the urine will naturally ſhew itſelf as ſoon as it is ſeparated into the Pelvis; that is, the ſtony particles having as ſtrong an endeavour to unite with one another in the kidneys as in the bladder, will, in conſequence of meeting firſt there, generally produce gravel and ſtone in that part; where they continue to accumulate till

ſpaſms, or convulſive twitches are excited, by which they are ſometimes thrown into the ureters; and at laſt, the bladder is made the ſeat of action.

SECT. III.

THE CAUSES HITHERTO ASSIGNED OF THE STONE.

Chymiſts, and many of the firſt natural philoſophers, as Sir Iſaac Newton, *&c.* have analyzed or decompoſed the human Calculus, and have found it to conſiſt of thoſe principles already deſcribed in the preceding Section: and although the different authors could not but agree, as to the nature of the ſeparate principles which compoſed the ſtone, yet almoſt all of them have entertained different opinions of the cauſe or conjunction of theſe principles in accumulating it.

It may probably be thought too preſumptuous in me to attempt to account for *that*, for which ſo many great men, eminent for their learning and ſagacity, laboured ſo long in vain. After retorting my adopted motto, "*Plus vident oculi quam oculus*" on their ingenious reaſoning, I confeſs myſelf indebted to the reſult of their reſearches for many particulars, which, otherwiſe might never have occurred to me. The immortal HERVEY, who diſcovered the circulation of the blood, left ſtill enough to be done by his

his ſucceſſors, in applying it to phyſic and anatomy: and although the ancient phyſicians were unacquainted with that part of the human frame, yet, in point of learning, it may be allowed, they were ſuperiour to moſt of the moderns. This clearly ſhows the folly or weakneſs of giving up a purſuit, becauſe it has been fruitleſſly undertaken by one or many *great* men. Some of the firſt phyſicians have aſſerted, that the operations of many medicines, as mercury, &c. were indefinable; and yet I am inclined to believe, there are but few who do not, at this time, know on what its ſpecific qualities depend. Without any further apology then for contradicting the opinions of my learned predeceſſors, I ſhall appeal to the judicious and candid, how far I have removed the epithet of *Occult* from the cauſes of the ſtone.--I ſhall begin firſt by recounting thoſe aſſigned by authors, who have hitherto written on the ſubject.

The firſt who treated of this diſeaſe, imputed the cauſe of it to an errour in the non-naturals, particularly an improper choice of food, to which was added, the too free uſe of crude unfermented liquors. This cannot poſſibly be the caſe, ſince we ſee that all ranks of people, the ſober as well as the luxurious, partake of this diſeaſe. Climate was then imputed as the moſt probable cauſe of the Stone; which can by no means be allowed, as we find in hot as well as cold countries, the ſtone exerts an equal influence. It has alſo been conſidered as analogous to the tartar in wine, and that it was produced by a too free uſe of that liquor. This cannot be deemed more concluſive than the former, becauſe, in coun-

tries where wine is little drunk, nay, in perſons who never taſted of it, the Stone has made great ravages. A petrifying quality in the fluid we drink is ſaid alſo to occaſion the Stone;--To ſupport which opinion, Paris is mentioned as a place where that diſeaſe abounds, from the quantity of ſtone contained in the river Seine: but from a ſtrict enquiry concerning this matter, I am fully convinced, that there is not a more proportional number cut in Paris than in London; and the greater part of theſe come from towns and villages where the ſeine has no communication. I muſt confeſs, that I myſelf formerly aſcribed the Stone to ſome one, or a conjunction of the forementioned cauſes, till, by a particular attention to the diſeaſe, and the Regimen of thoſe who were under its influence, I was undeceived. To ſatisfy myſelf how far an attention to the water we drink might conduce to prevent the ſtone, or retard its growth, I ſet about making the following experiments. I cauſed a tin Kettle to be made in the common form, except that the cover was raiſed by means of a jetting open rim, to the height of one inch, and being of a larger diameter than the kettle itſelf, it entirely kept out any duſt that might accidentally fall down the chimney, and its conſtruction, as readily ſuffered the water to evaporate. I then ſet a common alembic to work, in which I diſtilled ſeveral hundred gallons of new river water, and ſupplied the evaporating kettle from the worm as it ran off.—The head of the Still had a ſwan neck, and being ſlowly wrought, nothing but the fluid in its pureſt ſtate could be drawn off.— After

thirty-

thirty-ſix hours operation, I ſuffered the kettle to run dry, and examining it carefully, I found a conſiderable portion of Saburra or earth, after the manner of the fur or cruſt adhering to a tea-kettle. This circumſtance convinced me, that the ſtricteſt attention to the water we drink, is not ſufficient to exempt us from the Stone.

In order to ſatisfy myſelf as to the poſſibility of a *ſtrictly* elementary fluid, ſometime after, I made an experiment with ſnow-water in a ſmaller degree, but ſufficient to diſcover that it alſo yielded a cruſt after a continued evaporation. This led me to conclude, that there is no poſſibility in human nature of obtaining a pure elementary water, that does not contain a portion of earth in it; and I am fully perſuaded, that, if the evaporated fluid had been again condenſed and made the ſubject of a third coction, there would ſtill have been collected ſome particles of earth. In a reiterated diſtillation, I ſuffered the water, after it had been drawn off, to ſtand covered over three days, and boiling it the ſame time as before, a greater quantity of ſaburra was collected; by which I conceive, that the primary particles of earth had time to attract each other, and, conſequently, by increaſing their ſpecific gravity, were leſs liable to be carried off in the effluvium. Now although it ſhould be poſſible to conſtruct a Still with a neck of a wonderful height, that much more of the groſſer earth might be detained in the bottom, (for I forgot to mention that a great deal more ſaburra was found in the Still than in the Kettle, although the water

was

was at firſt apparently clear) yet that would not be likely to do more than catch the particles in a collected ſtate; for, there is not a doubt but the primary particles of ſtone are lighter than quickſilver; and yet that ponderous body can be ſo rarefied as to be borne up by a very ſubtil æther, or fine vapour. It is therefore plain, that although you might diſtil water until you could no longer diſcover ſtony particles in it, it would not prove there is none; on the contrary, it will be found, that after it has been ſtrained, filtered and diſtilled *as it were*, through ſome of the fineſt veſſels of a human body, (which are a thouſand times more exquiſite and elaborate than *art* can ſupply) I ſay, that after all this, it ſhall be proved to contain theſe primary particles of Stone.

Some time after I had made the foregoing experiments, I was informed that a gentleman in Lincolnſhire had been cut for the Stone, and in hopes of avoiding that cruel perſecution again, had furniſhed himſelf with a Still, through which he had drawn, for four years, every drop of water he uſed; not only as drink, but even to prepare his meats in; and yet he was unhappily ſeized with the diſorder a ſecond time in his kidneys, and by a fall from a gate ſo lacerated the containing veſſel, that he bled to death. Many other perſons have been led to drink only diſtilled water, from a notion of its being entirely freed from its earthy particles; which indeed, has, at firſt view, a great deal of plauſibility in its favour.

SECT.

SECT. IV.

INFERENCES DRAWN FROM THE LAST SECTION.

SEEING then that we cannot, by any known operation, free *water* from a certain quantity of earthy particles, we muſt conclude, that in *it*, is contained the ſubject-matter of the diſeaſe; notwithſtanding, it cannot be ſaid to be the diſeaſe itſelf, becauſe thouſands continue in health who drink it without reſtraint. Thus much being premiſed to prove, that no one of thoſe cauſes hitherto aſſigned of the Stone is the *true* one, and that it is not in our power to prevent the diſeaſe from falling to our lot, it behoves me to declare what, in my opinion, is that *true cauſe*, and to ſhew how far a medicine may be relied on, as a cure for ſo formidable a diſeaſe.

In order to underſtand more perfectly the cauſe of the Stone, it is neceſſary to ſhew by what means the fluids we drink are conveyed to the blood; from which it will appear, that although a man ſhould ſwallow a great quantity of ſand, or powdered ſtone in his drink, he would be no more liable to have one form in his body, than if he had taken it in its natural ſtate. The chyle, or any other fluid, is conveyed to the blood, from the ſtomach, by means of ſmall tubes or pipes, called lacteal or con-

coctive

coctive ſtrainers. Nothing can paſs from the mouth, or more properly from the ſtomach, to the blood but by means of theſe canals, which are the ſmalleſt in an animal body. If this was not the caſe, ſuch particles of matter might be admitted into the blood as could never be diſcharged again, which would conſequently be productive of obſtructions, the moſt inveterate and incurable: and it is certain, that the abſorbent veſſels or recipient lymphatics, which are ſpread over the ſurface of the ſkin, are ſmaller than the interiour ones, otherwiſe the ſame mortal obſtructions would enſue. Now it is evident, in fact, from microſcopic obſervations, that the largeſt blood globules do not exceed $\frac{1}{2000}$ part of an inch in diameter: It is alſo well known, that the diameter of a particle viſible to the naked eye, muſt not be leſs than the $\frac{1}{100}$ part of an inch, whence it follows, that the magnitude of one of theſe larger blood globules, is leſs than the largeſt viſible particle in the proportion of 8000 to 1; and therefore, ſhould theſe blood globules, without any further attenuation or diviſion, be ſuppoſed to paſs the glandular ſecretories, they muſt come off in an extremely thin attenuated effluvium or vapour, the particles of which would be 8000 times leſs than any ſenſible or viſible particles. But it is certain, that the diameters of the largeſt ſecretory ducts or glandular ſtrainers, muſt be leſs than the leaſt of the blood globules; otherwiſe theſe blood globules themſelves would paſs thoſe ſtrainers, and be thrown off in bloody ſecretions, which we know cannot happen in a natural ſtate of the fluids and ſolids.

How

How much leſs the ſmaller globules are than theſe already taken notice of, cannot eaſily be aſcertained, ſince they are imperceptible, even by the beſt microſcopes. It is a fact, that Lewenhoek and others have diſcovered an infinity of theſe ſecretory and excretory veſſels, the diameters of which do not exceed $\frac{1}{80000}$ of an inch, and conſequently, a fluid cannot paſs and repaſs theſe circulatories, until it has been ſo far rarefied and volatilized, as that its largeſt particles ſhall be leſs than any viſible or ſenſible particle, in the proportion of 512000000 to 1.

This great rarefaction of the fluids in their circulation, or immiſſion and emiſſion to and from the blood, may ſeem ſtrange to ſome, and yet it is certain, that fluids are capable of being rarefied or effluviated into any aſſignable degree of tenuity. To aſſiſt our faith in this, let us but conſider, how far the moſt denſe and ſolid ſubſtances, as thoſe of metals, may be divided or attenuated, actually by the help of art.—Doctor Halley has proved in the Philoſophical Tranſactions, that one ſingle grain of gold is ſufficient to overlay or gild, ninety-eight yards of ſilver wire; and has alſo ſhewn, that the thickneſs of theſe *lamellæ* does not exceed $\frac{1}{124500}$ of an inch, which is leſs than the diameter of one of theſe ſmall excretory tubes before taken notice of.—From what has been before advanced, it is obvious, that nothing can paſs the lacteals, and be taken into the circulation, but in the form of a fine attenuated vapour; therefore, all the powdered ſnails, egg-ſhells, and ſuch like inſoluble traſh, in the compoſition of Mrs.

Steven's medicines, muſt have been entirely uſeleſs; for they cannot affect the urine without paſſing thro' the circulation of blood. This may, to many, ſeem very new and wonderful; but it is a fact, that all the boles, calcined earths, and minerals, commonly preſcribed as alteratives of the blood, cannot poſſibly claim any pretenſion thereto. If it be aſked why impurities of the blood are often removed by cinnabar and other preparations of antimony, if they are not abſorbed with the chyle, I anſwer, that by deterging the primæ viæ & viſcera, and cleanſing the orifices of thoſe veſſels in their paſſage through the body, it enables them to convey a larger portion of chyle into the maſs; and conſequently, nature gradually overcomes the diſeaſe by throwing off, by the excretories, in proportion to the additional ſupply.

Notwithſtanding the ſurpriſing ſmallneſs of theſe veſſels, we need not wonder how a body ſo large as that of a man, ſhould receive ſufficient nouriſhment thereby, when we conſider the vaſt infinity of them, and that the ſtomach and ſmaller viſcera are capable of abſorbing and carrying to the blood, by their means, ſeveral gallons in twenty-four hours; nor is it poſſible to ſay what quantity of urine the kidneys are capable of ſecreting from the blood in that time: but, I have myſelf, (in a caſe where poiſon was ſuſpected to be received into the blood) ſo drenched a man with diluting liquors, that he made ſeventeen quarts of urine in one night's time, the greater part of which had ſcarce acquired, from its ſhort

ſtay

ſtay in the blood, the leaſt taſte or ſmell.—At a more convenient time, I ſhall endeavour further to amplify and elucidate this part of the animal ſecretion, ſo far as concerns the cure of cutaneous eruptions, and glandular obſtructions:—thus much I judged neceſſary here, as it proves incontrovertibly, (contrary to the general opinion) that the Stone is not occaſioned by an improper diet:—neither can the blood, in any degree, be ſaid to circulate or convey any concreted ſtony particles to the kidneys; for it has been ſhewn before, that the glands of the kidneys are ſmaller than the lacteals themſelves; they therefore could not paſs, but would, in accumulation, occaſion diſorders, more immediately fatal, than that of which we are treating.—In all probability the blood itſelf would, while mixed with the urine, prevent it from reſolving into concretions, as its parts would be kept aſunder in that common maſs.

From the very great difficulty of eſtabliſhing any new opinion, which militates againſt a generally received one, I think it neceſſary to relate the particulars of the following experiments, which, as they may be repeated by any indifferent perſon, will be likely to exempt me from the imputation of ſubſtituting notions inſtead of facts: and as it would be preſumptuous in me to expect a greater indulgence than others before me, who have advanced any new doctrine, I am more particularly ſolicitous of convincing from demonſtration.

EXPERIMENT I.

I took a fragment of a human calculus of five grains weight, and put it in the urinal of a perſon, who never had the leaſt complaint of the Gravel or Stone, and whoſe water was bright and tranſparent :—After continuing it thus for ſeven days, I weighed it, and found but little alteration ; but conſidering that the motion of the urine in its emiſſion from the body, might agitate the Stone, and ſo diſlodge any ſaburra that ſhould looſely adhere to it, and thereby fruſtrate the experiment, I removed it into another veſſel, and poured the urine gently into it after it was made ; by this mean it was ſuffered to be more at reſt. At the end of twelve days, I again weighed it, and found it had gained more than half a grain. I could obſerve, by the help of a glaſs, that the accumulation was principally on the rougheſt ſide, which was that broken from the larger Stone. The ſame experiment I repeated with the urine of a child, and found the ſame effects in almoſt an equal degree.

EXPERIMENT II.

A gentleman applied to me to be cured of a Stone in the bladder ; but as he had at that time another diſorder upon him, which required an immediate attendance to, I forbore, during a fortnight, to preſcribe to the Stone, but deſired that his urine, during that time, might be poured upon a bit of calculus of exactly eight grains weight : Now although its

ſurface

ſurface was larger than the firſt fragment, yet at the end of that time, in was not increaſed in the ſmalleſt ſenſible degree.—I was not however perfectly ſatiſfied with this experiment, fearing the medicines he was taking, might have cauſed his urine to be brought off in ſo crude a ſtate as to prevent it from giving out its ſhare of earth: To ſatisfy myſelf of this, I got the urine of two perſons, under the ſame courſe of medicines in Bartholomew's hoſpital, and immerged a piece of calculus therein as before; and at the end of only nine days, it was increaſed nearly half a grain; from which it is plain, it was not any thing in his courſe of medicine that with-held the urine from reſolving into that earth, which ſhould have even increaſed the piece of calculus, as in the latter experiment. The inference is, that the Stone which was already formed in his bladder, continued to attract the earthy particles from the urine, as ſoon as it came into the bladder. I was further confirmed in this, by his telling me, that for ſeveral years, previous to his attack of the Stone, he had voided urine, at times, very thick and muddy, or ſandy; but that ſince he had diſcovered he had a Stone formed, his urine had been at all times limpid, and clear of all ſand or grit; nay, that it was bright as amber, except when he had taken any violent exerciſe, after which it would be loaded with mucus, or tinged with blood.

SECT. V.

OF THE REAL CAUSE OF THE STONE.

The firſt experiment with the evaporating kettle, convinces us, that water cannot, by any human operation, be freed of a certain portion of earthy particles, which are in themſelves ſo light as to be carried over the helm of a Still with the vapour; and that this is not only ſo in fact, but conſiſtent with reaſon, is evident in the diſtillation of quick-ſilver, which although ſpecifically thirty times heavier than the hardeſt marble, is content to be borne up in the form of a vapour or exhalation.—— Theſe earthy particles, for the ſake of perſpicuity, ſhall, hereafter, be diſtinguiſhed by the name of *primary particles of Stone;* and that theſe ſame particles are the only ones likely to form a Stone in the human body, is proved by what has been already ſaid on the nature of the veſſels, which convey the chyle into the blood.

The firſt experiment in the laſt Section as clearly proves, that the urine of all perſons partakes of thoſe primary particles of Stone, which are contained in the fluids we drink; ſo that the only conſideration that remains is, what firſt induces the concentration of theſe primary particles ſo, as to become a nucleus of the Stone: for, from the ſecond experiment of the ſame Section, we find, that when once a nucleus exiſts in the body, it collects, by its attractive force, the particles on its ſurface, and ſo accumulates

lates continually; by which mean only, the urine is likely to become really an elementary fluid.—This attraction of the Stone is conſiſtent with the manner of cryſtallizing ſalts, and is indeed conformable to the operations of all nature.

Hence it is plain, that the cauſe of the Stone can be no other than the kidneys, or bladder ſuffering the urine to lie in them a longer time than natural, by which mean the primary particles of Stone have time to enter into contact with each other. The height of the diſeaſe, therefore, depends upon the degree of weakneſs or debility of either kidneys or bladder.——It is not poſſible to form any idea how many times ſmaller theſe primary particles of Stone are than the leaſt viſible particle: but it is probable, that as no fluid is free from them, ſo they are never ſo entirely at reſt, but that an accumulation might take place, and continue ſome time; and yet the collected particles ſhall ſtill be too ſmall to be ſeen by the naked eye, or even by the beſt glaſſes.—Nay, we can ſo divide and ſeparate the particles of that heavy body, quickſilver, as that they ſhall not be traced by our beſt microſcopes, and yet we cannot deny their exiſtence or deem them annihilated: on the contrary, we can collect them again by *art* without their nature being in the leaſt changed.

This then I take to be the exact progreſs of the diſeaſe. By the œconomy and ſtructure of our bodies, it is required we ſhould drink a certain quantity of fluid to aſſiſt in aſſimulating our food, and to con-

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vey the nouriſhment to the blood, further to be diſtributed for the growth and ſtrength of the whole. Now, as it has been proved that water, in its moſt pure ſtate, ſtill contains an infinite number of thoſe primary particles of Stone, it is evident, that we are liable every hour we live, to be attacked with this diſeaſe; and yet we cannot infer from thence, that our bodies, conſidered as machines, are imperfect: on the contrary, the All-wiſe Creator has made a great proviſion againſt theſe ills, by the particular ſtructure of the kidneys; theſe being the firſt parts likely to ſuffer in this way, Providence has framed the avenues to them exceeding ſmall, with a view of preventing any concretions from being carried thither: but at the ſame time, conſidering that as ſoon as the urine is ſecreted from the blood, it will be liable to fall into concretions, by the meeting of thoſe particles which continually float in it, and which now are brought into cloſer contact from the concentration of that fluid; ſeeing therefore, this is likely to be the caſe, they are furniſhed with excretory tubes or ureters, that are capable of admitting ſtones of a conſiderable ſize through them.—The ſame may be ſaid of the bladder, in reſpect to the urethra, or its excretory tube.

But to reſume the ſubject of the firſt formation of the Stone.—Seeing, then, that the urine is always ſaturated with theſe primary particles of Stone, and that they are never at reſt, but are always in a ſtate of fluctuation from that principle of attraction inherent in them; as ſoon, therefore, as two of theſe particles

ticles ſhall meet together, they increaſe in ſpecific gravity, attracting other particles, as they fall in the fluid; ſo that as they continue to accumalate, their attractive power increaſes, and they are likely to take up all thoſe concretions they meet with, which are ſmaller than themſelves. This is manifeſted in thoſe congeries of ſmall ſtones, called grape-ſtones, the interiour piece of which, is always larger than thoſe around it.—This is certainly the reaſon why there generally forms but one Stone at a time in each kidney: it is very uſual indeed, to have ſeveral in the bladder together, becauſe, as they are collected in the kidneys, they may be thrown over into the ureters ſo large, that they cannot be further taken up in the way of attraction.

Thus then we ſee, that the great phenomenon of the Stone's accumulation, is only the kidney, or bladder's failing to ſpurn, at the firſt oppreſſion of the accumulated particles; which, by this time, ſhould acquire the name of Gravel. That hitherto inexplicable and undefined *nucleus* of the Stone alſo, is here clearly proved to be nothing more or leſs, than the conjunction of two of thoſe fixed, or primary particles of Stone; thoſe two, when combined, attract a third, then thoſe three take up a fourth; and ſo on, *ad infinitum*.--How many thouſands of theſe may be neceſſary to make up a particle, viſible to the naked eye, cannot be aſcertained; but it is certain, that they muſt be infinitely ſmall, as it were, otherwiſe, none could eſcape the diſeaſe:—for when we conſider the vaſt accumulation of the particles in water that is cold,

and ſtanding at reſt, how much more ſhall it be in a concentrated fluid, where the motion is likely to throw the particles into contact with each other? —There is no doubt but the urine of every perſon, as ſoon as it is ſeparated from the blood, begins to form theſe accumulations; but that, in moſt people, it paſſes through the body ere the particles are become large enough to be ſeen. In others, they may arrive at the ſize of pins' heads, and then be evacuated, according as the veſſel containing them, whether kidney or bladder, ſhall be more or leſs irritable. Hence, there is no real difference in the quality of Stones, whether formed in the bladder or kidneys, as ſome authors have advanced. Seeing then, from what has been premiſed, we cannot know how far the kidneys or bladder may ſuffer the accumulation to go on, even after the particles have become viſible, we ſhould therefore, in this ſtage of the diſeaſe, never omit endeavouring to expel it intirely.

'Till the concretion be advanced to this point (which is what may juſtly and ſtrictly be called the Gravel) we can form no idea of what is likely to enſue: for, before the particles become ſenſible to the touch, or viſible to the naked eye, the work could not be ſaid to be preternatural; nor could we ſuggeſt any occaſion for giving medicines, ſince we ſee thouſands that paſs through life, who were never able to diſcover gravel or ſand in their urine.——It may be ſaid, that even though the particles ſhould be ſeen in the urine of many, as large as ſand, yet they find no inconvenience therefrom, but continue in health. This may

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be the caſe; but thoſe perſons live in a ſtate of ſuſpenſe. Every accident lays them liable to the formation of a Stone:--A confinement, or deprivation of exerciſe for a few days only, or an accidental laxity of the kidneys or bladder, might throw the particles into a ſtate of concretion; which, when once too large to paſs the excretory tube, is out of the reach of all diuretics; and can be cured by no other means than by leſſening its ſize, and ſo procuring its diſcharge. Having then ſhewn that the gravel is no other than the Stone in a milder degree, we might, with equal propriety, call the firſt ſtage of the gravel, the Sand, ſeeing it is nothing more than the ſize of the concretions which conſtitutes its name.

An extraneous body being introduced into the bladder, will immediately become a *nucleus*, and cauſe a Stone, although the perſon had never had the leaſt indication of gravel or ſand before; which is a more convincing proof of the urine being always charged with thoſe earthy particles.--In St. Thomas's Hoſpital the point of an ill-prepared Bougie broke into the bladder, and generated a Stone.—In Guy's Hoſpital, a bit of leaden Probe did the ſame. A drop of blood will become the *nidus* of thoſe earthy particles, and cauſe a Stone: from which circumſtances it appears, that all extravaſations of blood, and eroſions of the veſſels are dangerous.

It is not poſſible to ſay how large a Stone would grow in the body, if ſuffered to augment, provided the patient could live under the torture; but there have been ſome cut out of the bladder ſo large, as to mea-

ſure eleven inches round, and weigh ſeventeen ounces, or more: and in the Hoſpital de la Charité is a Stone, which weighed, when firſt extracted, fifty one ounces.—All Stones become conſiderably lighter, when expoſed to the open air.

SECT. VI.

OF THE STONE IN CHILDREN.

From the early age in which many children have been attacked with this diſeaſe, authors have been induced to pronounce it hereditary; which cannot be the caſe, unleſs it be allowed, that the *nucleus* of a Stone is conveyed with the ſemen in coitû, to ſuppoſe which, is an abſurdity in the nature of things.

Thoſe authors who alledged the cauſe of the Stone to be a too free uſe of malt liquors, and others who imputed it to an errour of the non-naturals, were obliged to pronounce the Stone in children hereditary, otherwiſe they would have contradicted themſelves; becauſe ſtones have been cut out of the bladder of children, who had but juſt been weaned from the breaſt, and who had been fed on nothing but milk. Children, in this ſtate, being attacked with the Stone, is an undeniable proof of thoſe primary particles of ſtone being inſeparable from every fluid we drink.—When we conſider the many glands the milk (with which the child is fed) is ſtrained through

through ere it reaches his mouth, and the many different fermentations and depurations it has undergone; I ſay, if, after all this, that moſt natural and nouriſhing liquor is the vehicle of earth, what can we expect from all the filtrations and diſtillations of water? It is really wonderful, but it is equally true, that a ſtone as large as an almond has been taken from a child of two years of age, who had lived entirely on a milk diet.—The concretion in ſuch young ſubjects muſt be conſiderably expedited by their ſupine poſture; the bladder is not ſo likely to empty itſelf in an horizontal, as in an erect poſture; if the bladder already contain ſand or earth, nothing is ſo likely to aſſiſt its formation of the Stone as a ſedentary life. This is evidenced in the great number of clergymen, judges &c. who are troubled with the Stone, and who ſit a great deal, and in every reſpect take but little corporal exerciſe: they are, moreover, obliged frequently to oppoſe the excitations of nature, by retaining the urine till the bladder be diſtended beyond its due bounds; ſo that it loſes its power in part, and becomes paralytic, and unable to contract itſelf ſufficient to emit all the urine.

SECT. VII.

OF THE SYMPTOMS OF THE STONE.

It has already been ſhewn, that the Gravel and Stone are the ſame diſeaſe in a different degree, conſequently,

ſequently, what is only the gravel now, may, in two months time be the Stone; the only line of diſcrimination between them is, that while the collected particles are ſtill ſmall enough to paſs from the kidneys to the bladder, and from the bladder through the penis, without preternaturally diſtending the ureter or urethra, the diſeaſe may be called the Gravel; but as ſoon as the calculi have acquired a ſize too large to be admitted through thoſe tubes, naturally, the caſe may immediately be pronounced the Stone. It cannot longer be called Gravel, when the piece or pieces of calculi are capable, (though in the ſlighteſt degree) of being felt by introducing the *Sound* into the bladder, though it does not follow that the Stone ſhall always be found by that inſtrument; for it may be ſo ſmall as that its reſiſtance to it ſhall not be felt by the niceſt fingers. It may alſo, by the particular ſtructure of the neck of the bladder in ſome perſons, lie ſo concealed, as to elude the ſearch of the moſt experienced operator: hence the reaſon why, at ſometimes, it may be felt by the catheter, at other times not: However, very often the ſounding will be likely to afford ſome ſatisfaction, and may, in moſt caſes, be ſaid to be neceſſary, except when the Stone is of ſuch a ſize, or of ſo long a continuance, and the ſymptoms ſo indicative, as to leave no room to doubt of it.

It has been ſaid, that in very rare caſes, bloody water may be occaſioned by the Gravel only; in *this* diſeaſe however, it will be a leading ſymptom, attending a too violent motion of the body, as riding

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on horſeback, or in a coach on rough roads, and in uneaſy carriages.—Too much walking, or any ſudden diſtortion of the body will bring it on; and whenever this happens, the patient may certainly conclude that he is unfit for exerciſe, but of the mildeſt kind; and although the laceration may not be diſcovered during the motion, yet it is unſafe. Ulcers are generally the reſult of repeated excoriations of the internal coat of the kidneys and bladder. The cauſe of bloody water ſhould more particularly be avoided, as its renders the Stone much more difficult of cure; and if it happens in a perſon of a bad habit of body, it generally drags him to the grave; the Stone ſerving to augment the dire effects by its continued friction and irritation againſt the defenceleſs, corroded veſſels. The Stone, by its ſtimulus about the neck and ſphincter of the bladder, will occaſion frequent irritations, and calls to make water in ſmall quantities; and as it advances in ſize, a pain will be felt in the neck of the bladder the moment the urine is made, and about the end of making. By a kind of ſympathy a pain is felt alſo at the glans penis or nut of the yard, the moment the urine is made; and if the Stone be rough, the pain will be exquiſite, by the neck of the bladder embracing it in its contraction. If the contraction of the neck of the bladder be ſudden in the emiſſion of the urine, there will be alſo felt an uneaſy ſenſation is the *anus* or fundament, occaſioned by that ſame itching or titillation at the end of the yard. The Stone will often be carried by the efflux of the urine to the neck of the bladder, and ſuddenly ſtop

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its courſe while running, till by a change of poſture of the body, or by the natural contractile power of the ligaments of the bladder, it be drawn back, and the urine ſuffered again to run out.——If, after the firſt flow of urine, there ſhould be a ſecond urgency to make it by drops, the pain will be immoderate, and of longer continuance. In general, it will be found that the urine may be made eaſier lying on the back, or on one ſide, and on any curvature of the body, than in an erect poſture.—— When the Stone has acquired a conſiderable ſize, it will be ſenſibly felt in turning haſtily in bed, from ſide to ſide, and its gravity will occaſion a pain in that part neareſt the os pubis, and even in the ſcrotum and teſticles; and as the neck of the bladder and the rectum are allied by one common membrane, a teneſmus, or ſeeming want of going to ſtool, will be excited at the times of making water.

Theſe are the common ſymptoms of the Stone in the bladder; ſome, or all of which, attend the diſeaſe in its different ſtages; but it is plain, that if the Stone be but ſmall and ſmooth, the ſymptoms and pain will be milder than if large and rough.—If the Stone attack a perſon of a feveriſh habit, he will be frequently liable to violent fits of it, attended with ſuch ſtrangurious pain as will occaſion an almoſt inceſſant deſire to make water, and that by drops only: it will alſo bring on raging thirſt, and even delirium. Theſe are ſymptoms that muſt be palliated by balſamics, warm bath, and if the habit be plethoric, venæ Section, to the quantity of ſeven

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or eight ounces, and repeated as occaſion may require. Cooling laxatives are alſo proper; as manna and oil, with barley-water and gum-arabic, and emulſions of almonds. A perſon of this temperature of body ſhould abſtain from all inflammatory things, keep his body rather looſe than otherwiſe, and particularly avoid violent exerciſe.

If the caſe be that of the Stone in both bladder and kidneys he will, beſide ſome, or all of the foregoing ſymptoms, have the following ones, which are peculiar to the diſeaſe when in the kidney: a dull obtuſe pain in that region of the loins where the kidneys are attached, together with a ſenſe of heat and uneaſineſs after motion; an uneaſy weight and preſſure in the part after a full meal, which will often occaſion a nauſea, and even a vomiting; in general, the patient will conceive an averſion to exerciſe from the uneaſineſs that accompanies it.—The Stone when ſeated here, as well as in the bladder, is liable to lacerate the ſmaller blood veſſels, and occaſion a diſcoloured or bloody water, which, if made freſh after the extravaſation, will be florid; but if it be retained ſome time in the body, it acquires, by mean of the urine, the colour of coffee-grounds.—Inflammation will alſo be frequently excited in the kidneys, and impede the ſecretion of urine, which if it happen to both at one time, will be found dangerous.

The wiſdom of Providence is peculiarly conſpicuous in the proviſion made againſt the conſequences

of this dreadful diſeaſe, by furniſhing the human body with two kidneys; ſince it is now proved, that one would be ſufficient to ſecrete the urine from the blood. I was myſelf preſent at the diſſection of a body that had but one kidney: it was examined by ſeveral other ſurgeons, who all agreed, that his death could not have been haſtened by that, as he was 35 years of age, and his illneſs was remote from any thing likely to be affected thereby.

Though the Stone in the kidneys may be more difficult of cure, from its not being ſurrounded with the urine, yet it is not ſo immediately dangerous; ſince a kidney has been found entirely blocked up with the Stone, inſomuch that, when taken out of the pelvis, it appeared like the trunk of a tree, with the branches ſevered a little diſtance from its main body: This is ſuppoſed to be the caſe of one of the kidneys of the firſt and moſt worthy of our nobility, who has lately begun the courſe that will be hereafter laid down.

We ſee, therefore, that the pelvis of the kidney though naturally ſmall, is, nevertheleſs, capable of great dilation; which accounts for dulneſs of the pain there, during the growth of the Stone. Women are much leſs liable to the Stone in the bladder than men, from the more favourable ſtructure of the paſſages of the urine; they are, nevertheleſs, frequently attacked with this diſeaſe in the kidneys; the ſymptoms of which cannot but be the ſame as in man, allowing for the difference occaſioned

caſioned by the more active life that one leads over the other; conſequently, more ſubject to inflammation.

SECT. VIII.

OF THE CURE OF THE STONE.

Although the doctrine of the cauſes of the Stone and nature of its *nucleus* as related in Chap. iii. Sect. v. is entirely new, and ſuch as militates againſt the opinions of every preceding author who has written on the ſubject; yet, I doubt not but they will be received as ſatisfactory, ſince they are founded on reaſon, and are conſiſtent with the eſtabliſhed notions of the greateſt philoſophers, reſpecting the formation of all ſolid bodies. It is moreover proved, that fluids, as well as ſolids, are made up of an aggregate of thoſe primitive particles, by mean of a medium peculiar to itſelf. The medium of the Stone is a fixed ſalt, in conjunction with a quantity of condenſed air, diſperſed throughout its ſubſtance: theſe become a kind of glue, and fill up the interſtices formed by the meeting of thoſe primitive particles, or *materia ſubtilis*, which compoſe the Stone.

Hence it is apparent, that whatever can deprive the earthy particles of their *medium* muſt neceſſarily

reduce them to their firſt and ſimple ſtate, and effectually cure the Stone, although its component atoms or particles be left unaltered. Nevertheleſs, ſuch a medicine is as effectually a diſſolvent of the Stone, as water is of ſugar; for this does no more than act upon its medium, the ſaccharine particles being left unchanged as from the beginning, and may effectually be collected into a maſs again; as is every day proved in the houſe of a ſugar-baker.

It ſhould therefore ſeem plain, that although in the ſtrict philoſophical ſenſe of the word, there is not in nature a Diſſolvent, (as is demonſtrated in the caſe of water with ſugar) yet, whatever decompoſes the conſtituent parts of a ſolid body, or reſolves it into its primitive particles or atoms, has the greateſt pretenſion to that title.

The chymical elements or principles, to which all bodies may be ultimately reduced, are theſe five: 1ſt, *Water*, or *Phlegm*, which in the chymical analyſis of them, riſes firſt in the form of vapour: 2dly, *Air*, which eſcapes unſeen in great quantities from all bodies, ſo as to conſtitute half the ſubſtance of ſome of them: 3dly, *Oil*, which ariſes after, and appears ſwimming on the ſurface of the water: 4thly, *Salt*, which is either *volatile*, and riſes in the Still, as that of animal ſubſtance; or *fixed*, as that of vegetables; which is obtained by reducing them to aſhes: 5thly, *Earth*, or what is called *Caput mortum*; being what remains of the aſhes after the ſalt is extracted.——This is the laſt element of all bodies

bodies, the primary particles of which can be no further altered by any art whatever.———All that concerns us, therefore, in the cure of the Stone, is, to deſtroy its adheſion, ſo that its parts may be divided ſufficient to be expelled the body. Now, whatever ſhall deprive it of *one* of its principles, will be likely to render it leſs adheſive, if of *two* of its principles ſtill leſs ſo, and ſo on; whence the Stone is rendered friable, and conſequently is waſhed away by the attrition of urine.

All thoſe who have ſo peremptorily aſſerted the Stone incurable, muſt have known very little of its conſtituent principles: they muſt have looked upon it as of one uncompounded nature, immutable as its firſt particles: yet they agreed, that is was poſſible to prevent the urine from running into further concretions, which is, in fact, contradicting themſelves, and allowing it curable, though in a ſlow degree. That a medicine ſhould prevent the urine from giving out thoſe principles which form a Stone, and yet not act upon the Stone itſelf, is not clear to me; however, if a medicine ſhall, by deſtroying the petrifying quality of the urine, hinder any new accretions to the calculus, it muſt neceſſarily, in time, have its ſurface waſhed down, and worn away by the urine (now rendered more ſimple) continually running along it, and the coats of the bladder acting upon it on all its ſides;

Quid magis eſt ſaxo durum, quid mollius unda?
Dura tamen molli ſaxa cavantur aqua.

There

There is a two-fold conſideration, in attempting to cure the Stone: the firſt is, What medicine will be moſt likely to deſtroy its component principles out of the body; the other is, Whether thoſe medicines will not be rendered inactive ere they reach the ſeat of action, it being the laſt glandular ſecretion of the body: likewiſe, Whether thoſe ſame medicines may be ſafely conveyed into the conſtitution, in the ſtate in which they are eſſayed. Now, that we cannot be ſafely guided by external appearances and trials, is evident in that of oil of vitriol, aqua-fortis, Glaubers ſpirits of nitre, &c. all of which, in their natural ſtate, are found to diſſolve the Stone out of the body; yet no one will infer that they are leſs than rank poiſons if taken in their full ſtrength. —That their power of action on the Stone reſts not on any innate ſympathy between the menſtrum and any of the conſtituent parts of the Stone is certain; for, if they were diluted to a degree, ſo that they might be ſafely taken into the conſtitution, ſo far would they be found from diſſolving the Stone, that they would rather furniſh it with the ſalt, that renders it more denſe and adheſive. They can no more be ſaid then to be diſſolvents of the Stone than actual fire, ſince it is the ſame corroſive phlogiſtic quality that deſtroys its texture.— If, therefore, that quality be taken from them (and it muſt be ere they could be given internally) it would be as reaſonable to expect the fire-coals, when quenched and given by the mouth, would ſtill deſtroy the Stone, ſince the qualification has a ſimular effect on either.

CHAP. III.

SECT. I.

OF SOAPS AND LIXIVIUMS.

The ſame obſervations hold good in reſpect to the fiery lixiviums; which, to render them leſs obnoxious to the conſtitution, are diluted, and thereby deprived of the diſſolvent qualities they poſſeſſed in their full ſtrength. Soap, from its being found a great diſſolver of unctuous and animal ſubſtances, was looked upon as a remedy likely to yield the deſired effect: it was accordingly adopted univerſally; but I can conſcientiouſly declare, that I never heard of a Stone being diſſolved by it. That it is a good medicine in many other complaints I allow, eſpecially if joined with other aperients; but then it ſhould be taken but ſeldom: whereas, whatever medicine is intended to diſſolve a Stone, muſt be continued for a length of time, and the blood continually ſaturated therewith.

As the conſtitutions of men differ very much, it is no wonder that ſome are leſs injured by this ſlow poiſon than others; nay, upon the whole, I am inclined to believe, that nineteen out of twenty are ſufferers

ſufferers by it in a very ſhort time: witneſs the bloated, ſallow countenance; offenſive, cadaverous ſmell of the breath; and bad digeſtion of thoſe who are under a courſe of it.

That ſoap is a great deſtroyer of animal ſubſtance is evident from the hiſtory of the Plague of London; as ſoap-boilers, waſher-women, and all thoſe who meddled with ſoap, were found to die ſooner, and with more viſible marks of putridity than others. With them, all alexipharmics and antiputreſcents were thrown away; none of them eſcaping. Every phyſician knows that ſoap has this deſtructive tendency, and that it breaks down the *craſis* of the blood; for which reaſon, they forbid it abſolutely in all diſeaſes tending to putridity. To demonſtrate this more ſufficiently, let a piece of fleſh, ſuch as beef, or mutton, (ever ſo newly killed,) be immerged, or ſuſpended by a thread, in a bottle half full of water, in which a ſmall quantity of ſoap has been diſſolved, and let the bottle be placed in a warm ſituation; in fifteen hours, or, if the weather be hot, in leſs time, it will begin to throw up air bubbles; and, in fifteen hours more, will emit a putrid ſtench, and bear all the marks of an approaching diſſolution and putrefaction: if it be, by the Thermometer, of the heat of blood, the corruption will take place much ſooner.

It is very rare to meet with the caſe of a perſon who has taken ſoap long enough to try what effect it will have on the Stone in the body; but as the caſe of a perſon in a conſpicuous character of life, is wont

to

to make a greater impreſſion on the minds of the public than that of others, I have ſelected the following, hoping I ſhall be acquitted of want of candour upon this point, when it is declared, that they were the moſt favourable ones of all thoſe who had taken the Soap; and that the patients were all along, even to their death, buoyed up with the hope of the Stone being in a diſſolvent ſtate.

THE CASE OF HORACE WALPOLE, Eſq; AFTERWARDS LORD WALPOLE.

His Lordſhip was taken ſuddenly ill when at Hampton Court. His caſe being, by his phyſicians, miſtaken at firſt for the cholic, he was treated accordingly; but in a little time a Stone was obſerved to paſs through the left ureter into the bladder, which, for the preſent, gave him perfect eaſe.—— Some time after, by turpentine glyſters, and internal lubricating medicines, it was evacuated through the urethra, being about the ſize of a barley corn.— Notwithſtanding, he was frequently afterwards troubled with gravelly complaints, for which he took Cream-Tartar whey, and great quantities of mucilages, which, though they kept him tolerably eaſy for two years, were found, nevertheleſs, to increaſe the accumulation of the Stone: for being at the end of that period at the houſe of a friend, he had a ſudden and urgent inclination to make water, when he was greatly ſurpriſed to find that the baſon contained a

pint of almoſt clear blood, which he had made with the greateſt pain he ever felt. This convinced him of the impropriety of his former regimen, and he reſolved to be ſounded; when, the Stone being found, he was immediately put under a courſe of Soap.—Accordingly (July 1748) he began to take an ounce of it every day, and three pints of Lime-water, which he continued to do till the beginning of the year 1757; from which it appears, that his Lordſhip took no leſs than one hundred and eighty pounds weight of Soap, and twelve hundred gallons of Lime-water! a quantity ſo prodigious as might ſtagger the faith of any one, if not authenticated by his own hand writing, and further corroborated by the teſtimony of Doctor Pringle F. R. S. as related in the Philoſophical Tranſactions.

With what little ſucceſs his Lordſhip took theſe nauſeating medicines for ſo long a time may be learned from the continuation of his caſe. It may reaſonably be preſumed, that ſo ſenſible a man as his Lordſhip could not be prevailed upon to continue in that diſagreeable courſe, if he had not been told that they were the only medicines that ſhould be given to him, and if he had not been flattered to the laſt with hopes of a cure. It is from this we find that he was elated with joy whenever he could bear the motion of his own carriage, which, however, he could do but very ſeldom, although of the eaſieſt conſtruction. He was obliged to have a Litter made for the purpoſe of carrying him to town from his ſeat at Woolterton, which journey took him

up

up five days, though but one hundred miles. He was all this time debarred the uſe of common food, and every other enjoyment of life, in order to aſſiſt, as much as poſſible, the power of the medicines.—He died, however, in that year, without any particular cauſe of his death's being aſſigned by his phyſician and apothecary, though they both gave their opinion that he did not die of the Stone.—Mr. Ranby and Mr. Hawkins were preſent at the opening, and found in the bladder, *three* Stones; two were about the ſize of a Spaniſh nut-kernel, the third ſmaller, which ſeemed to be a part broken off one end of the largeſt Stone: and, in a letter from Doctor Pringle to Doctor Whytt, they were deſcribed to be ſmooth, and of a poliſh as fine as a boy's marble.

Although the above caſe was looked upon as one of the moſt favourable reſulting from the effect of Soap, yet I hope the judicious reader will agree with me in the following particulars: that there was but little reaſon to ſuppoſe the Stones were waſting, as there was no diſcharge of ſand nor pieces of Stone; and although his lordſhip might have intervals of eaſe, it was nothing more than could be expected from his low, temperate diet, and abſtaining from much motion. Beſides, it muſt appear very ſtrange, that the Stones ſhould have been of that ſize at his death, ſince he began to take the Soap and Lime-water as ſoon as he found any ſymptom of the diſeaſe. It cannot, with the leaſt colour of reaſon, be ſuppoſed that the accumulation could have reached ſo far as

three Stones, without his Lordſhip being appriſed of it: whence it follows of courſe, that, in ſpite of the enormous quantity of thoſe reputed lithontriptics, the Stones continued to augment —It was remarked by thoſe who adviſed his Lordſhip to take the Soap &c. that the ſmoothneſs of their ſurface muſt have been occaſioned by the effect of the medicine. This, in my opinion, is not at all probable; it might, with more propriety, have been imputed to the friction of the Stones one againſt another, which we well know will produce the like effect. This is alſo the only way of accounting for his Lordſhip's eaſe at intervals, ſince Soap and Lime-water, ſo far from effecting it, do generally inflame the internal coat of the bladder, and render it neceſſary to give great quantities of milk, broth, &c. as a defence againſt it. The only tincture of reaſon for adducing his Lordſhip's caſe as a ſhew of the qualities of the ſoap, muſt have been owing entirely to the temporary eaſe he enjoyed: but I am inclined to believe that what I have juſt advanced upon this head accounts for it in a much more rational and ſatisfactory manner; with this further obſervation, that (in my opinion) it makes directly againſt the Soap:—for, as no reaſon or cauſe is aſſigned of his death, it would appear, that he died of a gradual depravity of blood and juices occaſioned by the Soap, as in the caſe of a maraſmus.—— This opinion is conſiſtent with the eſtabliſhed and well known effects of that medicine, when long continued.

Although

Although the Caſe above related will, without doubt, be ſufficient to convince the world of the inefficacy at leaſt of Soap and Lime-water in the Stone, yet, as that of Mr Hay's is ſtill more remarkable, from his having taken it in larger doſes, I cannot omit it; nor muſt I forget to mention, that the very writer of it had then an opinion of Soap and Lime-water as Lithontriptics.

THE CASE OF WILLIAM HAY, Eſq;

* Being an Extract of a Letter from Dr. *Ruſſel*, of *Brighthelmſtone*, to *Henry Pelham*, Eſq; communicated to Dr. *Whytt*, by the late Revd. Dr. *Stephen Hales*, Clerk of the Cloſet to her Royal Highneſs the Princeſs of *Wales*.

November 25th, 1755.

Mr. Hay took three Ounces of Mrs. Stevens's Medicine in a ſolid form every day for five years, never leaving off, except for a few days, to obſerve the effect of the medicine.

About five years ago he left off the uſe of theſe medicines, and afterwards purſued, with the ſame conſtancy, the uſe of Caſtile Soap and Lime-water, mixed with milk. At firſt he took three ounces every day; but about two years before his death, he re-

* Author of *Deformity*, an Eſſay.

duced

duced the quantity to one ounce. Under this method he grew ſo eaſy, that riding in a coach, or walking, ſeemed to give him but little pain. This inclined him to get on horſeback, which he had not done for eleven years; but he found an inconvenience from it the firſt time, and after the ſecond time (which was a little before his laſt illneſs) he was heard to complain that his old diſtemper was like to return again as before. He is reported to have died apoplectic, having neglected to uſe the neceſſary evacuations.

Two days after his death Dr. Ruſſel was deſired to attend the ſurgeon on taking the Stone out of the bladder, which was empty of urine, and grown quite callous from the Stone's rubbing againſt it.

The Stone weighed three drachms, two ſcruples, and eight grains; was flattiſh and oval; of a ſhining cheſnut colour, perfectly poliſhed and ſmooth to the touch in every part. Being deſirous to ſee what the outward laminæ were compoſed of, I ſeparated them, and found one thick and friable, the other thicker, and of a brown loam colour, as well as the Stone to which they adhered; and was daubed over with very rough aſperities.

From this ſhort account of Mr. Hay's Caſe, the Doctor obſerved that Mrs. Stephens's medicines, or Soap and Lime-water, may give relief to patients, and make them paſs through life eaſier, even although they ſhould have little or no effect in diſſolv-

ing

ing the Stones: and as Mr. Hay, as well as the Biſhop of Llandaff, continued to diſcharge red gravel in ſpherical pieces, he remarked that, that Gravel ſeemed to be what is generated in the kidneys, where conſequently the Lime-water, &c, have no power; though he thinks they will hinder the Gravel when fallen down into the bladder, from uniting or growing into a Stone.

From the above declarations, it appears that the Doctor began to doubt their power in diſſolving human calculi, as they certainly had the faireſt trial given them in the above caſes, as well as in that of the Biſhop, and many others. The eaſe which Mr. Hay received in the latter part of his days, when ſitting ſtill, does not ſeem to have ariſen from the effects of the medicines, as the Doctor confeſſes that the Stone was hard and ſmooth, which ſmoothneſs was certainly owing to the violent friction of it againſt the ſides of the bladder, the latter having become callous by that mean, and, conſequently, leſs ſuſceptible of pain.

This Caſe, as well as the former, could only have been ſelected on account of the eaſe which, at times, Mr. Hay enjoyed, and which, I think, is as fully accounted for by the ſmoothneſs of the Stone, together with the neck of the bladder having become callous. There is alſo the ſame reaſon to believe the Stone increaſed in ſize in this as in his Lordſhip's caſe, becauſe, as ſoon as it was diſcovered, Mr. Hay began a courſe of Mrs. Stevens's medicine.

When

When it is conſidered that the two foregoing caſes were the moſt favourable inſtances of the effects of Soap and Lime-water, very few perſons, I believe, will build hopes hereafter of being cured by them: and although I have known thoſe who have taken the Lixiviums as long, yet I never knew an inſtance of their curing the Stone; nor do I believe it poſſible they could, were they even taken for 20 years.

CHAP. IV.

OF

A NEWLY DISCOVERED REMEDY,

OR

SPECIFIC SOLVENT

FOR THE

CURE OF THE STONE.

ALL diſcoveries likely to be uſeful in phyſic, muſt have philoſophical reaſoning to put them on foot; and the nearer the practice of phyſic approaches the known laws of mechanics, the more ſure is its ſucceſs and ſtability: Without ſuch a rational procedure we ſhould act in the dark, and apply them at random. *Qui forte fortuna curat, forte fortuna necat,* is a proverb of great verity, and ſhould be had in mind when our health is concerned: for it is certain, that where there are no true conſiſtent principles, there can be no rational conſiſtent practice: it muſt be founded upon ſome principle or other, either right or wrong.

Although it is of much greater importance to the world in general, to know that a certain remedy is able to cure *this* or *that* diſeaſe, than to be informed of the preciſe manner in which it produces this effect; yet, to inveſtigate the cauſes of diſeaſes, and the operation of medicines in the cure of them, is a ſubject, not only worthy of thoſe who make the practice of phyſic their ſtudy, but alſo, highly entertaining to a philoſophical mind: for, it is probable, that a medicine whoſe properties and manner of operating on the human body are known, will be more judiciouſly and happily applied in the cure of diſeaſes than one, whoſe unknown nature and action ſcarce afford any indication under what particular form or circumſtances it may be adminiſtered with the greateſt ſucceſs.

By the word *ſpecific* is meant a medicine that operates, as it were, elective ly, or affecting one part or fluid of the body, without acting univerſally on the conſtitution as antimony, ſteel, and moſt ſudorifics do. A ſpecific medicine, therefore, is ſuch, as that in all the fermentations it may be drawn into in its courſe through the body, it ſhall ſtill preſerve its innate property, ſo that it may cure the diſeaſe it is preſcribed for, without changing the habit in any other reſpect.—It has been already ſufficiently ſhewn, that the corroding quality of a menſtruum is not to be ventured upon in the cure of the Stone; for by that we might deſtroy the conſtitution ere we conveyed its power to the bladder.—From what has been ſaid, alſo, reſpecting the accretion of the

Stone,

Stone, it is as plain, that whatever medicine becomes a cure of the Stone, muſt act upon ſome one or more of its principles, by the deſtroying, (or to ſpeak more phyſically) by the ſaturating of which the adheſion of the Stone ſhall be leſſened; conſequently, the earthy particles, having loſt their *medium*, will neceſſarily ſeparate and be waſhed away with the urine.

Although the annexed caſes of cures of confirmed Stones will prove that this end has been fully anſwered in the diſcovery of this *ſpecific* Solvent; yet it may not be amiſs to ſhew, by a ſimple experiment, in what manner it is obtained, without the appearance of a miracle.—Salt is not the only predominating principle of the Stone; it is alſo the cement of other compoſitions, as glaſs, mortar, &c. Now we all know, that if the lime ſhould be deprived of its ſalt it will be no longer fit for the purpoſes of building; for although it ſhould be mixed with ſand, and tempered as in the uſual way, it will never become firm, but continue a friable calx, which, if uſed to build with, would occaſion the work to be blown down by the ſlighteſt puff of wind. The adheſive property may, nevertheleſs, be given to it again by the addition of a *fixed* ſalt: hence the reaſon, why mortar made with ſea-water is more durable than any other. This conſideration was the foundation on which I built my hopes of a cure of the Stone. The additional power it has of deſtroying the oily parts of the calculus, I confeſs to be partly the effect of accident. This latter principle only ſerves to account for the haſty ſolutions of Stones by the Solvent, as a medi-

cine that ſhould operate only by volatilizing the ſalt, might ſtill be impeded by the oleaginous particles with which a Stone abounds.—I believe I need not mention, (eſpecially to the phyſical part of my readers,) that as ſoon as the oily and ſaline parts are divided, the fixed air is neceſſarily excluded; by which means the earthy parts ſeparate in exactly the ſame manner as the accretion was carried on in its formation.—— Hence the reaſon why, in ſome, the Stone may be voided in ſmall ſandy particles, or in others, in irregular little pieces.—Thoſe congeries of little Stones, called grape Stones, are undoubtedly diſtinct and ſeparate nuclei, which are attracted and taken up by a ſtill larger nucleus; and, if viewed by a glaſs when firſt expelled, ſhew plainly the part whence they are detached from the main piece.

CHAP. V.

OF THE DIFFERENT DEGREE OF DENSITY IN STONES.

IT has been ſhewn in the inſtances of a ſection of Stones, that they are not only liable to be very different in their textures, but that the different laminæ of the ſame Stone will be of different degrees of coheſion. This accounts for the reaſon of the irregularity of the diſcharge of earth during the operation of the Solvent, as the *outſide* lamina may be leſs firm and coheſive, conſequently, the ſolution or ſeparation of its parts will be quickly brought about. The *ſecond* may be denſer, and therefore it will not be operated upon ſo ſoon, and *vice verſa*. Seeing this is the caſe, it is worthy our conſideration what is the occaſion of this change in the habit, ſo as to effect the formation of a *harder* or *looſer* compacted Stone.

According

According to our ſucceſs herein, we may be able to lay down a rule or regimen for thoſe who are either under the influence of the *preſent* diſeaſe, or are fearful of an attack.

I believe it has been ſatisfactorily proved, that it is not in our power to prevent a certain quantity of earthy particles from entering the conſtitution with the fluids we drink. As a further proof, however, let it be remarked, that in filling a vial of the cleareſt ſpring-water, and ſuffering it to ſtand at reſt for two or three weeks, the combined particles will be found at the bottom, and ſome finer ones will be diſcovered on the ſides of the glaſs, in the nature of a fur or cruſt; and if the ſame water be decanted into a freſh vial, and permitted to remain as before, the ſame effect will enſue; nay, were it even poſſible to change the vial by decantation ſo long as that ſcarce any particles would become viſible to the naked eye, there would ſtill be a great deal ſeen by a microſcope: and, after all this, if the water ſhould be impregnated in the ſmalleſt degree by any vegetable matter, as a bit of turnip, or apple, ſo as to excite a ſlight fermentation in the water, it will not fail to precipitate a new quantity of earthy matter. This effect is principally owing to the primary particles being put in motion, and conſequently, more likely to entangle each other when in contact. It likewiſe ſerves to ſhew us, that Water, whether in the form of tea, ale, or any other prepared liquor, ſtill retains to the very laſt, a portion of Earth.

To

To account, therefore, for the difference in the colour and denſity of the ſame Stone, it behoves us to conſider, that it is probable there are *two* kinds of primitive particles of Stone; the one ſpherical or globular, the other of an oblong figure, inclining to a flat. Now, as it is highly probable alſo, that the ſmalleſt particles ſeen by the very beſt microſcopes, are ſtill aggregates of thoſe ſimple particles, we can do no more than judge of their *firſt* figure by the ſhape they aſſume in the preſent ſtate. The harder Stones, as cryſtal, are found to be made of fine *ſtriæ* or *lamellæ*, nearly equal to each other: when, therefore, theſe lamellæ meet or enter into contact, (from what cauſe ſo ever) in a ſufficient quantity, the conformity or regularity of their ſeparate figures determines their arrangement equally in the whole, and leaves the homogeneous body tranſparent, by reaſon of its admitting a paſſage to the rays of light, equally every way.

From what has been juſt now ſaid, we may account for other Stones being opaque and porous, in proportion as their component particles approach nearer a globular figure. If a Stone be made up of both kinds of particles, it will be of a mixed nature, neither tranſparent nor fully opaque. Stones of the human body, however, never approach to a perfect tranſparency, owing to the quantity of fixed ſalt contained in it. Salt tends to increaſe opacity, unleſs it have undergone a heat ſufficient to vitrify it. The particles of all kinds of ſand, when viewed through a microſcope, appear pellucid; ſo that their colour being

being lighter or darker, ſeems to depend upon the quantity of ammoniacal ſalt contained in the urine, which ſerves to fill up the interſtices between each lamellæ. The cloſer and firmer the coheſion of theſe particles is, the lighter is the colour of the Stone, and *vice verſa*.

If we conſider the nature of light, and the manner in which the rays are refracted and reflected by ſaline bodies, conformable to Sir Iſaac Newton's Experiments of the Priſm, we may eaſily enough account for the variety of colour of Stones, according as they abound more or leſs with ſalt: hence the reaſon why a Stone, or one or more laminæ of a Stone, are different in colour from the reſt. It is not however to be underſtood that the ſaline part of the Stone has other than the *mediate* property of giving tranſparency or opacity to Stones, according as it more or leſs abounds: it obſorbs air, either fixed or rarefied, more than all other bodies. Now if a Stone contains a greater quantity of fixed air, its particles will be kept farther aſunder; conſequently, the rays of light cannot paſs freely out of one particle into the other, but are, in part, refracted by the air, which is a denſer medium than light itſelf. Hence the reaſon why the moſt tranſparent and brilliant glaſs becomes opaque when reduced to powder, owing entirely to the component particles of it being ſeparated further from each other, and admitting the air between them, and which cannot be excluded again but by a violent fire.

To profecute this matter to the utmoſt extent, would be to run through the different doctrines of light and air, and conſequently ſwell the work beyond its intended compaſs; neither could it be proper in this place, as the preſent treatiſe is intended more to ſerve the patient than inſtruct the artiſt. However, as I have made ſeveral experiments on Stones, the reſult of which may tend to throw ſome new light upon the nature of air, gravitation, and attraction; if I find this ſketch meet with the approbation of the learned world, I may be prompted hereafter to publiſh them at large.—I ſhall content myſelf for the preſent, with collecting from theſe experiments, what regimen will be moſt compatible for thoſe who take the Solvent, with a view of diſſolving the Stone. This requires a two-fold conſideration, the firſt, what is conſiſtent with the diſeaſe itſelf, the next, what is leaſt likely to fruſtrate the operation of the medicine.

In order to be more particularly ſucceſsful herein, I made a number of experiments as in chapter vii. with a mixture of Solvent and different juices of animal and vegetable ſubſtances, kept in a proper degree of heat, in which were infuſed different pieces of calculus of equal weight and of the ſame Stone, which was cut from a boy of eight years of age, that appeared of an uniform conſiſtence throughout. This was made choice of as preferable to one taken from a man, the laminæ of which might differ in coheſion from his variety, or change of manner of living.

CHAP. VI.

OF
CARUNCULÆ,
AND
EXCRESCENCES
OF THE
PASSAGES.

IT frequently happens that excreſcences in ſome part of the urethra, by impeding the flow of urine, are taken for a complaint of Stone, eſpecially if attended with conſiderable pain, which may be occaſioned by the ſphincter of the bladder giving paſſage to the urine freer than can be diſcharged by the leſſened dimenſion of the cavity of the penis.

It may be remarked, that if a perſon during the time he is making water intercepts its exit by compreſſing the penis, a violent pain and uneaſineſs enſues, from the too great dilatation and ſtretching of the nerves, the moſt exquiſite of feeling of any part of a human body, and with which this part in particular is well furniſhed.

It is likewiſe not uncommon for the paſſage to be contracted from the many cicatrices remaining after the cure of venereal ulcers; eſpecially if the diſeaſe was of a long ſtanding, or if ſuch ulcers were prepoſterouſly healed by aſtringent medicines, ſuch as ſugar of lead and others. If a perſon has had a gonorrhæa a number of times, he rarely eſcapes them in one part of the paſſage or neck of the bladder. It is a natural conſequence, and may be perceived, that the ſkin of any part of the body is drawn together or contracted, when there has been an ulcer (or *ſolutio continui*) healed there; which makes it obvious, that ulcer upon ulcer muſt conſiderably leſſen the internal cavity of the urinary paſſage, and make the ſtream of water much ſmaller than in its natural ſtate. If the excreſcences (which are pieces of fungous fleſh reſembling warts) hang looſe in the paſſage, they often occaſion great pain and obſtruction of urine, and cauſe it, when running, to be divided in its ſtream like looſe threads, but may be diſtinguiſhed from the Stone, as, in this laſt caſe, the obſtruction in running is only at times; whereas, in the other, it continues as long as they remain.

There is alſo a complaint diametrically different in effect, proceeding from the ſame cauſe; which is, a laxity and debility of ſuch parts, induced by a too free uſe of mercurials during the cure; the well known property of which is that of relaxing.

In ſuch a complaint, by the incontinence and ſometimes profluvium of urine, with an aching pain after

voiding it, the patient has been led to imagine he had the Stone: the frequency in making water does not proceed from any ſtimulus, but merely from a weakneſs in the contracting muſcles of the bladder.

It is not to be ſuppoſed that ſuch complaints can be cured by the Solvent; it would be the greateſt abſurdity to expect it, as they originate from a cauſe remote from the Stone. The two firſt of theſe diſorders are only to be cured by the proper uſe of bougies; and the laſt by the yoke, an inſtrument to be worn on the part. The bougies for deſtroying fungous fleſh, ſhould be in a ſlight degree eſcharotic, and require great judgment in preparing them: but, in ſtrictures of the paſſage only, they ſhould be quite ſimple, as they are intended only to dilate and expand. This ſhews the fallacy of ſome people who diſpenſe bougies of *one* quality, which they aver will cure *all* obſtructions in the urinary paſſages whatever; whereas, it is plain, that the laſt ſort can be of no ſervice in the former caſe, and *(e contra)* the application of the former would inevitably render the latter diſeaſe incurable.

CHAP. VII.

OF THE
REGIMEN
IN THE
CURE OF THE STONE.

WHEN a patient finds himſelf attacked with the Stone, either in the kidneys or bladder, it behoves him to lay aſide all violent exerciſes, eſpecially riding on horſeback; it may endanger an hemorrhage of blood, which, if often excited, will terminate in an ulcer,—There are thoſe notwithſtanding, and even of the Faculty too, who are prepoſterous enough to adviſe every ſpecies of motion, with a view of ſhaking out the Stone: a procedure, however, to which none but the moſt weak and inconſiderate will agree, or adviſe.--It has coſt many their lives, and others have incurred incurable ulcers. It is eaſy to conceive, that if the inſide of any of the urinary veſſels are excoriated, that the acrimonious water paſſing through them is ſufficient to irritate and keep them from healing.—Much exerciſe can never reaſonably be recommended but in a caſe of the

the ſimple gravel, where we are ſure there are no pieces of calculi too large to be driven through the paſſages; nay, even in this caſe, it is more adviſable to deliſt from all violent exerciſe, as nature, nine times out of ten, will, with the aſſiſtance of diuretics be found ſufficient, unleſs the diſeaſe be complicated with an inertneſs of the veſſels The bladder in particular, from ſuppreſſions of urine, will become in a degree paralytic. In all theſe caſes, however, as they are ſecondary diſeaſes, it is ſafer to take the Solvent, in order to leſſen the concretions ſtill more, by which the tone and contractile power of the veſſels will be reſtored, and the pieces diſcharged in the natural way. By this mean, the preſent effects are not only removed, but the urine is prevented from reſolving into thoſe principles which formed the concretions, and the patient is likely to be kept from a return of the diſeaſe: *ſublata cauſa tollitur effectus.*

The moſt adviſable exerciſe, therefore, is walking on ſmooth ground as long as the ſtrength of the patient, or ſtate of the diſeaſe will permit. It ſhould never be continued ſo long as to change the urine to a coffee-colour, or ſo as to appear tinged with blood.——If there be no reaſon to ſuſpect the Stone large, or rough and hard, a gentle motion in a carriage (off the Stones) may be allowed: but this will be beſt judged of by the frequency of making water, and by the pain upon the bladder contracting round the Stone after the urine is made.

The

The intention of cure by mean of this Solvent, is aſſiſted in retaining the urine as long as we can naturally in the bladder: whence it is obvious, that all violent motion defeats this end by inducing a frequent ſtimulus to urine.

Our next conſideration reſpects the diet, which ſhould be alſo adapted to the ſtrength of the patient's ſtomach. In *common* caſes, it will be ſufficient to attend to the following rules; in all others, it is preſumed the patient will ſeek for particular information, as, in a complication of diſeaſes, &c. it may be neceſſary to make exceptions.

It is compatible with the nature of the diſeaſe, and the operation of the Solvent, to incline as much as poſſible to a milk diet, eſpecially when the ſtomach is enfeebled, or the whole habit emaciated: it may be eaten in its natural ſtate, or made into porridge, rice-milk, cuſtards or puddings. There is no fluid leſs likely to form ſtony concretions than this; nor any more likely to prevent feveriſh or irregular heats in the habit, which are great incentives in the Stone: but as there are conſtitutions attacked with this diſeaſe which have been always uſed to a more unreſtrained diet, I have thought it beſt to arrange a certain number of articles by way of breakfaſt, dinner and ſupper; and the patient may be left to make choice of ſuch as beſt agree with his ſtomach and inclination. He will, by this mean, be prevented from being cloyed with the ſame food, and, conſequently, his regimen will be leſs ſevere. For Breakfaſt

faſt, milk, boiled or not; rice-milk; or milk-porridge; tea; coffee; or chocolate: for Dinner, plain broth; boiled fiſh of all ſorts, except eels; any kind of butcher's meat, not ſalted; but lamb and veal are preferable; and all boiled meats are more to be adviſed than roaſt; all kinds of poultry, except geeſe and ducks; rabbits boiled or roaſted; of game, the feathered kind only are to be eaten of.—The prohibition of veniſon, turtle, and all made diſhes with ſtrong gravy muſt be diſpenſed with. The following vegetables may be taken of with melted butter, viz. potatoes, turnips, cabbage, cauliflowers, ſpinnage, peaſe, beans, and french-beans. The following are to be avoided; viz. artichokes, radiſhes, aſparagus, onions, and all raw ſalads; alſo, cucumbers, unleſs eaten with a little ſalt only. The patient ſhould at all times avoid eating too much, as, if the ſtomach be ſurcharged, digeſtion is imperfectly carried on; whence flatulencies, want of ſleep, &c. are produced, and the diſeaſe is heightened by the urine becoming crude and ill-prepared.

The beſt kind of malt liquor for thoſe who live in London is porter, reduced with water to the ſtrength of table-beer: in the country, only the fineſt and beſt fermented ales, or table-beer ſhould be drunk. There are perſons who drink nothing with meals but treacle-beer, in which they find their advantage, eſpecially if they be of a coſtive habit.

In reſpect to wines, (which ſhould be drunk only at, or after dinner,) the Table at the end of this chapter,

ter, will ſhew which are the leaſt liable to reduce the power of the Solvent: the ſame in reſpect to fruits, which, as well as wine, ſhould be taken only with dinner, either in tarts or with or without ſugar by way of deſſert.—There requires the greateſt caution in reſpect to ſupper, that it may not (by its being taken ſo near the doſe of the Solvent) militate againſt its operation. It is wiſhed, that the medicine ſhould be abſorbed with as ſmall a quantity of chyle as poſſible; and that it may avoid all haſty fermentations in its paſſage from the ſtomach, it is therefore, that panada-gruel, milk-porridge, dry-toaſt, or biſcuit are to be preferred; or at moſt an egg and ſpinnage, or a boiled egg, with a little weak rum, or brandy and water; or, which is better, wine and water. Where a thirſt prevails, it is proper to have recourſe to a draught of barley-water at any time in the day; nor can there be the leaſt objection to tea or coffee in an afternoon with or without bread and butter, or toaſt and butter.

In reſpect to the quantity of fluids that ſhould be drunk in the day, it ſhould not be leſs in the whole than about four pints. By this is meant the broth, or tea, or barley-water, &c. but in caſes of fits of the ſtrangury, attended with a more than common irritation, it may be neceſſary to enlarge that quantity, by drinking copious draughts of veal-broth or almond emulſion.—It is generally adviſeable to take ſix drachms of rochelle or glauber ſalts, previous to commencing with the Solvent: it commonly prevents the coſtiveneſs conſequent upon the uſe of it

(a favourable event in itſelf,) from running, however, to a painful extreme.——Let it be remembered, that all acids, and all ſtrongly aceſcent liquors, ſhould be forbidden during the uſe of the Solvent.

A TABLE, SHEWING THE PROPORTION IN WHICH SEVERAL JUICES AND DECOCTIONS REDUCE THE POWER OF THE SOLVENT ON THE STONE.

	DEGREES.
One part Solvent and three parts water, kept blood-heat twenty-four hours, had power on the piece of Calculus to— — —	40
With a decoction of turnips, cabbage, and ſpinnage — — —	36
The ſame with as much mountain wine —	28
With as much red port — —	26
With a fine and clear ſmall beer —	32
With as much ale — —	27
With rum, brandy, or proof ſpirit —	20
With the juice of melon — —	29
With pine apple juice — —	27
With peaches, apricots and nectarines —	25
With mulberry juice — —	21
With Summer codlings —	17
With red gooſeberries — —	14
With red currants — —	12

From

From which it appears, that currants, gooseberries, codlings, and mulberries reduce the power of the Solvent to a great degree, and are not, therefore, so proper as melons, pines, peaches, nectarines, and apricots; almonds and pistachio nuts are very agreeable to the nature of its operation, and may be eaten of *ad libitum*.

CHAP. VIII.

A FEW REMARKABLE CASES OF THE EFFICACY OF THE SPECIFIC SOLVENT IN THE CURE OF THE STONE.

THE author has choſen to omit in this, the caſes of the *four* former Editions; nor did he think it neceſſary to publiſh all thoſe which have ſince occurred: He has contented himſelf by ſelecting a few of the moſt remarkable, or of thoſe perſons in the moſt conſpicuous part in life; he has in poſſeſſion however, the caſes of cures of ſome hundreds of perſons, which are equally open to the peruſal of thoſe who may be inclined thereto. Among theſe are many of the ſimple Gravel, which were thought not worthy of publication, as it is eaſy to conceive that a medicine which can diſſolve the Stone, and prevent the urine from reſolving into thoſe principles which generate it, muſt neceſſarily be the moſt effectual remedy in the Gravel. This is the advantage it juſtly claims over thoſe remedies in the Gravel, which operate by their diuretic quality only, as they do no more than expel the Gravel already formed; whereas, in the caſe of the Solvent, the ſerum of the blood and urine being wholly ſaturated with its property, it effectually prevents an immediate return or renewal of the complaint, by which means thoſe original parts recover their priſtine ſtrength and elaſticity: hence it is probable the diſeaſe may never return again.

THE

THE CASE OF

JOHN BENNETT, Esq;

OF

NEW ORMOND STREET,

LONDON.

MR. BENNETT had been a great many years afflicted with complaints of the gravelly kind; even ſo long ago as the laſt war he ſuffered exceedingly by it; inſomuch that he was obliged to quit a very lucrative employment under government. He had conſulted ſeveral of the faculty at Liſbon, and in ſeveral parts of the Weſt Indies without being cured; at laſt he returned to England, where he derived no greater advantage: on the contrary, he grew worſe and worſe. He had been differently treated by different phyſicians and ſurgeons, ſome affirming his caſe a *Stone*, and others an *ulcer* near the proſtate glands, for which injections, bougies,

&c.

&c. had been prescribed. By this management he grew so ill, that his life was every moment despaired of. His pain was seated under the os pubis, down by the perineum, and even through the urethra to the glans penis, with a continued strangury. Sometimes a total stoppage of water; at others, by making it only by drops, the pains would become so intense as to throw his whole body into convulsions; in which state he would continue for many hours. These fits, the intervals of which were very short, confined him to his room for more than a month together. Sometimes they were attended with such an extreme coldness, as rendered it necessary to lay him on a bed very near a large fire, in which state he was immoveable for a long time together. During this melancholy stage of his disease, it was necessary to feed him with a teaspoon like a child. He had some little time before been made acquainted with the Solvent, but he was adjudged too weak to begin with it; however, as it was conceived he could not much longer survive the pain, it was thought proper to consult me upon the occasion. When I first saw him, he was in a very emaciated condition, and I learned his situation to be as before described, with many other disagreeable circumstances attending it. I even saw him in a severe fit, the pain of which was so excruciating, that it threw him into a violent fever and delirium, accompanied with a very quick and intermitting pulse, and even *subsultus tendinum;* out of which, I myself never expected to see him alive. I was asked my opinion of the disease, and the danger he was in; to the

lat-

latter, it may be conceived, my anſwer was not very flattering: but I affirmed, that there was not the leaſt doubt of its being a Stone. An entire confidence being now placed in me, I immediately preſcribed him a febrifuge julep, and in three hours after I gave him the firſt doſe of the Solvent, which, from the exigence of the caſe, I repeated every ſix hours. The muſk and caſtor contained in his julep, had ſo far calmed and reduced his fever as to enable him to make anſwers to the queſtions propoſed to him; and in two days he was brought ſo much to himſelf as to quit every other medicine except the *Solvent*, which he now took regularly every eight hours, for eight or ten days. During this time, he had ſeveral very ſevere fits, though rather leſs than the former; however, in a month he was manifeſtly better. As he had never been ſounded for the Stone, I propoſed the introduction of the catheter for that purpoſe; but he had ſuffered ſo much from the ſoreneſs of the paſſages, that he could not be prevailed on. He now took the Solvent unremittingly twice a day, and found he made water much freer, and with conſiderably leſs pain. The paroxyſms were alſo ſhorter, and leſs ſevere. His urine was generally limpid as water, except when the irritation had forced a quantity of mucus along with it. There was very little Gravel to be obſerved in it, but by the time he had taken the Solvent ſix weeks, a ſmall piece of white ſtone was found in his urinal. He now grew ſo eaſy, that he could walk out without any material inconvenience, and had recovered his appetite and ſtrength to a ſurpriſing degree.

His

His direful train of ſymptoms ſoon entirely left him, and he omitted the Solvent to obſerve how he ſhould be without it. Being threatened once more with his malady, he had immediate recourſe to the Solvent again, which he continued with very ſmall intermiſſions, till, it is conjectured, he had taken fourteen or fifteen bottles; at the end of which time he was in better health than he had been for many years: and what is very remarkable, that ſince his cure and leaving off the Solvent, (which is now near two years) he has ſcarce ever failed to ride or walk four or five miles every day.

REMARKS ON THE ABOVE CASE.

The above caſe convinces us, that a Stone may be of a texture ſo hard, and its component parts ſo fine, as to be borne up by the urine, without letting it fall in any material quantity, although it ſhould ſtand the uſual time to cool and ſettle. That a hard Stone is made up of particles finer than one of a looſer texture, has been clearly ſhewn heretofore: the whiter the Stone is, the leſs liable alſo are we to collect the particles in the urinal, both from their original figure, and conformity to the colour of the urine: indeed, it ought to be mentioned, that from my ſituation at that time I had it not in my power to viſit Mr. Bennett ſo often as I could have wiſhed, and therefore could make obſervations but

ſeldom

ſeldom on his urine: likewiſe, that when he grew well enough to go out, he frequently urined on the ground, by which mean bits of the Stone might be avoided without his knowledge. It was allowed on all hands, that his caſe muſt have been either a Stone in the bladder, or an ulcer, as before-mentioned; which laſt opinion was conjectured from a continued diſcharge of ſerous fluid through the urethra, but which I have often obſerved in caſes where the Stone was hard, or lay very near the ſphincter of the bladder.——If his caſe had been an ulcer, the Solvent could not have done him ſervice; on the contrary, it would have increaſed his pain, by rendering the urine more volatile: nor do I know any other complaint in which the Solvent can be preſcribed with aſſurance of ſucceſs but in a Stone, or Gravel. We ſee, therefore, that a ſmall hard ſtone will be productive of more diſmal effects than a large ſoft one. If the Stone, in this caſe, had not been ſmall, it is preſumed it would have been diſcovered in turning haſtily in bed, which was not the caſe. Every other ſymptom accompanying a ſmall Stone was felt by him: moreover, it is reaſonable to ſuppoſe, that if it had not been ſmall, it would have required a much large quantity of medicine for its ſolution.

THE CASE OF

THE REVEREND MR FOWKE MOORE,

As tranſcribed *verbatim* from his letter to the Author.

To MR. PERRY, Surgeon, &c.

SIR,

I Flatter myſelf it will be unneceſſary to apologize for the trouble occaſioned by this letter, which gives you an account of the ſucceſs of your Solvent for the Stone, &c. Encloſed I ſend you the ſtate of my caſe, as I had it printed in different ‡ news papers, and which you are alſo at liberty to make uſe of as you pleaſe.

I have the pleaſure to inform you, that I have had many applications made to me ſince my cure; ſome from perſons I was quite unacquainted with, deſiring to be informed of every minute particular, which I have not failed to anſwer; and have taken pains to do juſtice to your medicine, which is no more than my duty; and yet I am largely recompenſed for any trouble I have, in the pleaſing proſpect of being the mean of relieving many miſerable people, and at the ſame time, increaſing your emoluments by the ſale of your truly valuable Solvent.

‡ See page 83.

I hope

I hope you will take care to have this kingdom always properly ſupplied with it; and I think it would be adviſable to have it in ſeveral of our beſt country towns, particularly in this northern province which is full of people, viz. Belfaſt, Derry, Newry, &c.

I requeſt you to pardon the liberty I take in giving you this advice unaſked, as it proceeds from my fellow-feeling for my unhappy countrymen, who labour under that dreadful diſorder, and from an earneſt deſire to be ſerviceable to you, who have been the happy inſtrument, under God, of reſcuing *me* from the jaws of death.

I ſhould be happy to have it in my power to do you any ſervice, for I am, with great truth and ſincerity,

Dear Sir,

Ireland, Dungannon, November 4th. 1776.

your much obliged, and very humble ſervant,

FOWKE MOORE.

THE *ADVERTISEMENT.*

"THE Rev. FOWKE MOORE, of Dungannon, in the county of Tyrone, having been cured of a Stone in the bladder by the above medicine, thinks it his duty, both in gratitude to Mr *Perry* the diſcoverer of the medicine, and in compaſſion to all thoſe who labour under that excruciating diſorder, to publiſh his caſe, which is as follows:

"In the beginning of December laſt, 1775, he was ſounded by an eminent Surgeon in Dublin, who immediately found a Stone of a middling ſize; upon which, by the advice of phyſicians, Mr Moore went under a courſe of ſoap-lies, which he continued from the beginning of December, to the 23d of May laſt, during all which time he had a moſt violent complaint in his bowels, and found not the ſmalleſt relief from the pain of the Stone: he was ſo emaciated, that it gave him pain to ſit without a cuſhion, and ſo weak, that he could not ſtep into bed without aſſiſtance.

"On the 23d of May, he began to take ADAMS's SOLVENT, and in a fortnight afterwards, he found a change for the better: he began from that time to diſcharge gravel, ſand, and glutinous ſtuff in great quantities, which continued for about three months, and then began to decreaſe gradually: he has now no complaint of any kind, and is convinced that the Stone is entirely diſſolved: he has recovered his fleſh and his colour, and is able ride a hard trotting horſe five miles in an hour. Any perſon who is deſirous to be informed of other particulars, may apply to Mr Moore in Dungannon."

Dungannon, Oct. 10. 1776.

The above caſe of Mr Moore not only ſerves to convince the world of the real power of the Solvent in diſſolving the Stone by a ſpecific quality, but alſo of its ſalutary and benign operation.—Nothing can more effectually deſcribe it of a nature very different

ferent from *Lixiviums*, or *Lies*, than this caſe; as it is obvious to every one, that, if the nature of the Solvent was in the leaſt tending to thoſe, ſo far from removing the ſickneſs of his ſtomach, broken craſis of the blood, and emaciated habit (which were plainly the effects of thoſe medicines) they would have been heightened thereby.

There is no degree of doubt but that if Mr Moore had continued the uſe of the Lixivium much longer, it would have occaſioned his death: for, when he firſt began the Solvent, he had written me a letter deſcribing the courſe he had been under, and deſiring to be informed whether it would be proper he ſhould continue to take it in that deplorable ſtate of health. —As I was confident his former courſe alone had brought him to that ebb of life, I adviſed him the more readily to perſevere in the Solvent, and gave him every reaſonable encouragement thereto. We find he had not taken it more than a fortnight, ere he began to mend of his moſt dangerous complaints. —— The bloated and ſallow complexion he had deſcribed in his firſt letter, gradually left him, which is an irrefragable proof, that the medicine is an antiputreſcent, an excellent property, which I flatter myſelf, the reſt of the Faculty will do me the juſtice to allow, could never be aſcribed to any medicine hitherto adminiſtered in this diſeaſe.--This advantage alone, over every other reputed lithontriptic, if they had even an equal power on the Stone itſelf, would be ſufficient to explode their uſe: but ſo far is the ſoapy lixivium from manifeſting a diſſolving quality,

that

that his complaints of the Stone grew worſe, not a paticle being brought off by it. Theſe corroſive lixiviums never fail to force off the mucus or lining of the urinary veſſels, and which, I believe, to ſome unexperienced people, has been looked upon as a ſalutary prognoſtic, from which they have been tempted to call them diſſolvents.

It is ſcarcely to be credited, the reluctance with which ſome of the phyſicians and ſurgeons of that kingdom were prevailed upon to believe the Solvent would cure a confirmed Stone. In the caſe of ſeveral perſons of inferiour rank, it was aſſerted their complaints could not have been the Stone, merely becauſe they were cured by the Solvent; and what is very remarkable, for ſeveral years before, they had, by thoſe very perſons, been treated under ſuch a diſeaſe.- -If Mr Moore had not been a clergyman of ſo much conſequence and probity, and if he had not been ſounded by one of the firſt Surgeons in Dublin, his caſe might have been doubted of alſo: however, by his laudable zeal and humanity in publiſhing his own caſe, and by the generous offices of my noble friends the late Commiſſioner Bourke, now Lord Naas, and the Right Honourable Edward Sexton Perry, Eſq; privy counſellor and ſpeaker of the Houſe of Commons, I have overcome their objections: indeed, it behoves me in this caſe, to acknowledge the very friendly letters of two phyſicians, who have lately, in a very diſintereſted manner, offered to diſpenſe the Solvent under my directions.

THE FOLLOWING CASE WAS TRANSMITTED TO ME BY THE FAVOUR OF RICHARD PHELPS, ESQ; OF DUNSTER, NEAR MINEHEAD; ACCOMPANIED WITH A FEW LINES TO THE FOLLOWING EFFECT.

To MR. PERRY, Surgeon, &c.

SIR,

FROM the converſation my friend Colonel Leland has had with Lord George Germaine, I am perſuaded to begin a courſe of your Solvent, as my diſorder is plainly a Stone: for which purpoſe, I requeſt you to forward me a large bottle by the firſt coach.—I wrote for the particulars of the cure of Mrs. Barnes of Taunton, which have been ſent to me; and as it is a very ſingular inſtance of the good effects of the medicine, it is recommended to you to publiſh it for the benefit of the world in general.

I am, Sir,

your humble Servant,

RICHARD PHELPS.

Mrs.

Mrs. Barnes had been afflicted more than ſeven years with the confirmed Stone, and Gravel, to a very violent degree; and had, during that time, conſulted the moſt eminent in phyſic, even thoſe who were at a great diſtance; and although ſhe had taken almoſt all the medicines common in theſe caſes, ſhe grew daily worſe, inſomuch that ſhe was at length given entirely up, and her death every day expected. Fortunately for her, while in this melancholy condition, Mr. Barnes happened to read the Bath Chronicle, in which was publiſhed an abſtract from the caſes of cures effected by the Solvent. He communicated this circumſtance to Mrs. Barnes, and his friends; and ſhe was prevailed upon, even in that languid condition, to begin a courſe of it: he immediately procured her two bottles from Mr. Crutwell of Bath, after the taking of which, ſhe found herſelf ſomething better, and began to diſcharge ſome Gravel. She was, however, by this, ſufficiently convinced of the eaſe and ſafety of its operation, of which, before, ſhe had entertained ſome doubt by the ſuggeſtions raiſed by ſome phyſical neighbours. By the favour of Mrs. Anderſon of Taunton, ſhe was now regularly ſupplied with the Solvent, which ſhe continued invariably to take to the ninth bottle, by which time ſhe had voided ſuch a quantity of ſand and Gravel as could ſcarcely be credited: but it is averred it could not be leſs than half a pint. By the very favourable diſcharge of Gravel, together with the ceſſation of many diſagreeable ſymptoms, ſhe had reaſon to hope her diſeaſe

was

was about to leave her; but she was suddenly surprised by an attack of the most acute pain she had ever felt, the irritation of which had abraded and forced away the mucus of the bladder, &c. In this situation she consulted me by letter how to proceed; and as I had not the least doubt but there was a Stone endeavouring to pass, I sent her the Solvent in its *full* strength, and advised her to desist from much motion, 'till she had discharged it, or 'till the pain had abated. She took *this* in the same doses as the *former*, and before a third part of the bottle was exhausted, she passed, with very moderate pain, a Stone about an inch long, and very near as much in circumference: this was followed by *two* more, very little less in dimensions with the former, which very considerably lessened her uneasiness. She continued the Solvent to the end of the bottle, during which time she had voided near a hundred small Stones; the largest of which were of an uncommon shape, almost flat, resembling in figure a small dried garden-bean. The discharge and pains now entirely ceased, and before she quite left off the Solvent, her urine, which before had assumed every morbid colour and consistence, now became entirely clear; and she recovered her strength and appetite to the astonishment of all those who had known her before.

The progress of this cure is so truly wonderful, that the world might justly suspect its reality, if it was not authenticated by Richard Phelps, Esq; as well as by the honourable John Founes Lettrell, Esq;

Member of Parliament for Minehead, who, it ſeems, was preſent at the recital at Mr. Phelps's.

REMARKS ON THE ABOVE CASE.

The mucilages and anodynes that had (no doubt) been given Mrs. Barnes with a view of blunting her pain, muſt have been the ſole cauſe of retaining the gravel to that enormous degree: for it appears from her caſe, and ſhe affirms it, that her kidneys and bladder muſt have been almoſt entirely blocked up with Gravel and Stones.———There are ſome other circumſtances attending her caſe not proper to mention here, that convince me, her bladder muſt have almoſt loſt its office, and which makes it certain, that ſhe would have expired, in a ſhort time, in the utmoſt agonies.

Nothing can ſo clearly evince the power of the Solvent as its viſible operation in a fortnight; nor its ſafety and benignity ſo much as in its perfect agreement with her ſtomach, though ſo exceedingly reduced before.—It may be remarked, that the flatneſs of ſome of the Stones ſhews they were formed in the bladder, which, from its different poſition in the *female* ſex, gives riſe to that ſhape: whereas, in that of the three firſt, there is no doubt but they originated in the kidneys. From the above caſe, we may, with the ſtricteſt juſtice, conclude, that the Solvent not only removes the preſent diſeaſe

of

of Stone, &c. but by ſaturating the fluids of the body, and reſtoring the veſſels themſelves to their natural elaſticity, prevents a future attack: for, although it is two years ſince Mrs. Barnes's cure, ſhe has not had the leaſt indication of any ſymptom of the kind. The ſame may be ſaid of every perſon who has been cured by mean of the Solvent. This places the cure itſelf in a preferable light to cutting, if it could be done even with equal eaſe and ſafety; for the latter does no more than remove the *preſent* effects, and leaves the patient liable to an immediate *return* of it. It is ſimilar to tapping in a dropſy, without purſuing any curative means. Every one's reaſon muſt inform him, that after lithotomy, the veſſels, ſo far from being *ſtrengthened*, (ſhould the patient be happy enough to ſurvive the dreadful operation) are *debilitated*, and therefore, they are leſs likely to exert a reſiſtance to any concretions forming in them. That this is the caſe is every day ſeen by thoſe who have outlived the operation.

It may not be improper to mention in this place, that upon Mr. Phelps's attack of the Gravel in the kidneys, he had begun a courſe of lime-water, and ſoap, and rhubarb; and yet a Stone formed itſelf in the bladder: If, therefore, theſe medicines will not prevent the urine from running into ſtony concretions, we may be ſure they can never deſtroy them when formed; conſequently, all thoſe who have recommended them muſt have been miſled, by their operation on Stones when out of the bladder.

THE FOLLOWING LETTER CONVEYS THE CASE OF A LADY AT TWICKENHAM, TO WHOM THE KNOWLEDGE OF THE SOLVENT WAS COMMUNICATED BY HER AMIABLE AND NOBLE FRIEND, LADY GEORGE GERMAINE.

SIR,

HAVING been greatly afflicted with the Stone and Gravel for at leaſt twenty years, during which time I voided a great quantity of Gravel, but no Stone, I was laſt June ſeized with violent pains in my right hip and groin. To deſcribe what I felt, is impoſſible; and till December, I never enjoyed one moment's eaſe, night nor day, except when aſleep, which reſt was of ſhort duration. I then took your excellent Solvent, which, in leſs than a fortnight, began to bring away the Stone by diſſolving it to a fine ſand. It is judged, when whole, to have been as large as a pidgeon's egg. I took the Solvent but about ſix weeks, which with the bleſſing of God, has, I believe, quite cured me. I have not taken any ſince November laſt, and yet I continue very well. May God ſtill give his bleſſing to your medicine, by which, I hope, numbers will be relieved as well as your very humble ſervant,

Twickenham, *March* 8th 1776. MARY LOVE.

OBSER-

OBSERVATIONS.

From the haſty diſſolution of this Stone, as well as of thoſe of Mrs. Barnes, it may reaſonably be ſuggeſted that women derive conſiderable advantage in this diſeaſe from the different ſtructure of the bladder. This circumſtance will likewiſe account for the reaſon women are rarely attacked with the diſeaſe, otherwiſe their life being leſs active than that of men, would, were it not for the before-mentioned reaſon, expoſe them to it in a more violent degree.

THE

THE CASE OF

MR. W. HARPUR,

AT

THE RIGHT HONOURABLE

LORD ROBERT BERTIE'S.

MR. HARPUR had been afflicted with the Stone many years to that degree, as rendered his life at laſt extremely burthenſome, and made him incapable of uſing exerciſe, or even any motion without great pain. It is not poſſible to deſcribe all the medicines he had been recommended to, and which he had taken without relief. He was at laſt adviſed to take the Solvent, which he did to the quantity of three bottles, before he perceived any alteration; but in the

the 4th or 5th, he was ſo much eaſier as to be able to walk about. He alſo began to diſcharge Gravel and ſand, and by the time he had taken eight or ten ſmall bottles, the Stone was ſo far operated upon, that it came way in concave pieces, like broken nut-ſhells. Previous to taking the Solvent, he had been urged to make water eight or ten times in an hour, and with ſuch exquiſite torture, that his cries were heard at a very conſiderable diſtance; but, by this time, he could retain his water for three or four hours, and make it with but ſlight pain. The Stone continued to be voided, ſometimes in the form of powder, at other times in thoſe hollow pieces before deſcribed, till at length, a round piece (ſuppoſed to be the nucleus) paſſed the urethra, and from this time he dated his perfect cure; for he could now ride on horſeback, without the leaſt inconvenience; and Lord Robert condeſcended to write a friend of mine his caſe, in which his Lordſhip was pleaſed to ſay, he was ſo well as to be the firſt at the Fox Chaſes.

OBSERVATIONS.

The peculiarity as to the form of the diſcharge of the Stone in the above cure, is a greater encomium on the Solvent than any thing that can be ſaid; as it plainly ſhews it does not act by any forcing or irritating quality on the veſſels themſelves, but partly from diſpoſſeſſing the Stone of its principles of coheſion. This ſame effect has frequently been perceived in the firſt coats of the Stone: it happened in the caſe of Sir William Yorke, who, during the

first six weeks of his taking the Solvent, discharged a great deal of Stone like bits of egg-shells, which were plainly distinguished to have constituted the outward coat of the Stone. This accounts for the ease he afterwards enjoyed at times from the use of the Solvent, although his case was complicated with erosions of the intestines, &c. &c.

THE CASE OF

MR. SAVAGE

OF

COBHAM, KENT.

MR. SAVAGE had, for five or ſix years, been attacked with the Gravel in the kidneys: he found himſelf always worſt about May or June, particularly if he omitted to looſe blood by the lancet, as he was habitually inclined to be plethoric. For the laſt two years the Gravel had concreted into a Stone, when, the ſand, he uſed to perceive in his urine, ceaſed to come away. He was at laſt confined to his bed with the moſt racking torture, after which, if he attempted to uſe exerciſe, he found his urine bloody, &c. A clergyman of his neighbourhood recommended him to try the Solvent, and after taking the quantity of three or four of the largeſt bottles, he diſcharged ſeveral pieces of Stone in fragments, and ſome looſe ſand: the pain gradually decreaſed, and he was able to uſe exerciſe, ſo that he looked upon himſelf as entirely cured. This hap-

pened in the winter of 1775, yet he was *unwilling* to proclaim himſelf perfectly well, till he ſhould paſs the Spring, at which period he had ſuffered greatly by the diſeaſe for ſeveral years; however, to his ſatisfaction, he not only paſſed over thoſe months free from an attack, but has continued ſo to this day, even without the leaſt complaint of the kind.

REMARK.

The circumſtance of the gravel ceaſing to come off when a Stone had formed itſelf, is exactly conſonant to what has been ſhewn in the preceding treatiſe: nor is it to be wondered, that he always found himſelf worſt in thoſe months, ſince the habit is then likely to become more robuſt and ſanguinary than in any other ſeaſon; conſequently, the frame more likely to be attacked with feveriſh ſpaſms from the motion of the Gravel.

THE CASE OF

THE RIGHT HONOURABLE

LORD GEORGE GERMAINE,

Secretary of State, and of his Majeſty's moſt Honourable Privy Council.

IN December 1774, I was deſired to meet Sir John Elliot at Lord George's, to conſult upon his Lordſhip's caſe, which I found had at one time been treated as a calculous one, at others as a laxity in the urinary gland, and which was ſuppoſed to give riſe to an extravaſation of blood.—Under the ſuppoſition of the latter being his Lordſhip's diſeaſe, he had been preſcribed balſamics and aſtringents; as bark, &c. Theſe medicines, although they removed the bloody water, did not leſſen his Lordſhip's pain; on the contrary, his diſeaſe was found to grow upon him.—The pain he had ſuffered was ſo exquiſite as rendered it neceſſary to adminiſter opiates to a great degree, ſo that his Lordſhip has been known to take upwards of a hundred drops of Laudanum in a night. His Lordſhip informed me, that at times the hemor-

rhage of blood was ſo great, as to threaten the moſt alarming conſequence. It may be ſuppoſed, that his Lordſhip had conſulted the moſt eminent ſurgeons, as well as phyſicians, upon his ſituation, which was not deemed the Stone, becauſe his Lordſhip had not been ſenſible of having paſſed any ſand or earthy matter in the urine. After his Lordſhip had, in the moſt accurate manner, related the progreſs of the diſeaſe, I immediately pronounced his caſe *Stone;* and recommended the immediate uſe of the Solvent. His Lordſhip began with it that day with the greateſt readineſs, particularly, as he had been ſtrongly prepoſſeſſed in its favour, from the accompts he had had of its effects.—I waited upon his Lordſhip the next day, when he told me, that the Solvent had ſitten very well on his ſtomach, and that it was rather agreeable to his taſte.—In a few days I found his Lordſhip's urine began to aſſume its natural colour, and the violent pain about the region of the loins decreaſed.--I waited upon his Lordſhip at the diſtance of about two days, until I had the pleaſure to hear his Lordſhip was exceedingly mended in health. I had alſo the ſatisfaction to find a diſcharge of ſaburrous matter in the urinal, which convinced his Lordſhip, his caſe had been merely Stone. This, in about a month after, was further corroborated by the evacuation of a piece of Stone; which was exceedingly hard within, and had all the evident marks of having been acted upon by the Solvent.——By this time (which was March) the bloody water had entirely ceaſed to come away, and only the ſlighteſt tinge was obſerved in it from ſome extraordinary exertions

exertions or fatigue. His Lordſhip continued to take the Solvent regularly till it was imagined the Stone was entirely brought off; but he had ſuffered ſuch excruciating torture from the diſeaſe, that he choſe to continue taking the Solvent nevertheleſs in ſmaller doſes, although I no longer enforced the neceſſity of it. So partial is his Lordſhip to the medicine, from the mildneſs of its operation, that he continues at this time, to keep a bottle in the houſe, by way of taking now and then a doſe, although his Lordſhip confeſſes he is not only free from the complaint, but is better in health than he has been for many years paſt.——His Lordſhip is therefore, to the unſpeakable joy of all who have the honour of his acquaintance, a living teſtimony, not only of the power of the Solvent in removing the Stone when preſent, but alſo of preventing its return: for, it is well known, that the part his Lordſhip takes in our preſent affairs, neceſſarily expoſes him, in his ſeveral departments, to great fatigues, and ſuch as could not poſſibly be borne in any nephritic complaint.

The innate benevolence of his Lordſhip's diſpoſition, prompted him to conſent that his caſe ſhould be publiſhed, for the benefitof thoſe who may unfortunately fall under the influence of this cruel diſeaſe. To this ſame motive may we impute the pains his Lordſhip has ſince taken, to ſend the Solvent to thoſe perſons having the Stone, whoſe ſituation in life excludes them from obtaining it but in that way.

OBSER-

OBSERVATIONS.

IT may be neceſſary to remark, that the Stone is not always diſcharged in pieces, or in coarſe powder, but ſometimes yields to the Solvent in the manner of a fine impalpable duſt, that appears in the urine in flakes of the nature of clay; and, if ſeparated from the mucus to which it adheres by means of ablutions with ſimple water, and paſſed through filtering paper, may be made up into little balls, which, when dry, are generally of the colour of brick.

The foregoing caſes, it is hoped, will be deemed ſufficient to ſhew the *ſpecific* power of the Solvent on the Stone, without publiſhing at length thoſe which would only appear like repetitions of the ſame effects. However, it may not be unneceſſary to mention, that, among thoſe who have been cured of the Stone, or otherwiſe benefitted by its preſent effect, are the following; *viz.* the Right Honourable Lord Hawke, vice Admiral of Great Britain, and of his Majeſty's moſt Honourable Privy Council; Lord Biſhop of Norwich; the Honourable Sir Robert Hamilton, Bart.; Lord Chief Baron Parker; the Rev. the Archdeacon of Wixford in *Ireland;* Judge Nares; David Garrick Eſq; Capt Evans of *Walton* upon *Thames;* John Cook Eſq; near the Church, *Hammerſmith;*——Stevenſon Eſq; Surgeon, *Egham,* Surry; J. Batchelor Eſq; of *Bathwick* near Bath; J. Woodrow Eſq; ſenior, *Norwich;* Mr Morgan, *Cardiff;* Mr Shribb, *Kelſal,* Suffolk; &c. &c.

I was

I was particularly ſolicitous of publiſhing the caſe of Mr Stevenſon, as it was attended with ſome very remarkable circumſtances. He was ſo exceedingly debilitated and relaxed by the fits of the Stone, that he had reſolved to undergo the operation, if he had not been recommended to the Solvent.—Mr Stevenſon did me the honour to promiſe me his caſe in form; but being under a neceſſity of ſending the copy to the preſs, I am obliged to poſtpone it till another opportunity.

As there may be ſome perſons who may entertain fears that the power of the Solvent may be too great for a tender conſtitution, I think it neceſſary to aver, in the moſt ſolemn manner, that I never knew an inſtance of the leaſt injury being ſuſtained from it; on the contrary, it may be given, with the greateſt ſafety, to a young child. A miſtake that happened a little time ſince, will further convince the world of the truth of this; my Lord Biſhop of Clonfert, in Ireland, ſuſpected he had the Stone, and requeſted Sir Robert Hamilton to ſend him two large bottles over to that kingdom: by ſome miſtake he took three *table* ſpoonfuls inſtead of *tea* ſpoonfuls, during the whole bottle; and though he took ſix times more than ordered, yet he found not the leaſt diſagreeable event from it, notwithſtanding, it afterwards appeared that his Lordſhip's caſe was not the Stone.

It is judged unneceſſary in this Edition, to repeat the reaſon why the Solvent is called "Adams's," and why the former editions were publiſhed under

that name: but, it is requeſted to be noticed, that thoſe perſons who live at ſome diſtance from London, and who wiſh to conſult the author, do write a day *at leaſt*, before the time appointed to ſee him.—It may not be improper to mention, that there have already been diſpoſed of ſeveral counterfeit bottles of medicines for the Solvent, which have come into the author's hands. It is therefore neceſſary to obſerve, that the *ſmaller* bottles are moulded with the words "Adams's Specific Solvent for the Stone and Gravel;" and the *larger* portable ones have a label affixed to them, with the following, "Adams's Specific Solvent for the Stone and Gravel, prepared by S. Perry, Argyle ſtreet, London; Price one guinea."

The proprietor begs to aſſure thoſe perſons who are afflicted with the Stone, to an uncommon degree, that he has invented an inſtrument for injecting with the greateſt facility, the Solvent, (properly diluted) immediately into the bladder, by which additional diſcovery, he flatters himſelf that let the Stone be ever ſo rough and hard, he can diſſolve its outward ſtratum almoſt immediately, and therefore can afford them eaſe in much leſs time than can be expected without it. He hopes further, that no one in ſuch circumſtances will, out of prejudice or fear, be deterred from applying for ſuch relief, becauſe the practice is new.

F I N I S.

ADVERTISEMENT.

The Solvent may be had in Bottles of 5 s. 6 d. 10 s. 6 d. and one Guinea, Wholeſale and Retail, of the Proprietor, S. PERRY, Argyle-Street, three doors on the right hand from Oxford-Street, where Letters are deſired to be directed: The following Perſons are alſo authorized to vend it in the Country, *viz.* Kempſton *Kettering*; Dawkins *Goſport*; Breadhower *Portſmouth*; Crutwell *Bath*; Crouſe *Norwich*; Meſſrs. Jobſons *Coventry*; Pearſon and Co. *Birmingham*; Pine *Briſtol*; Harrop *Mancheſter*; Goadby *Sherborn*; Lee *Lewes*; Smith *Canterbury*; Raikes *Glouceſter*; Jackſon *Oxford*; Pugh *Hereford*; Crutwell *Wokingham*; Monk *Cheſter*; Trewman *Exeter*; Wright *Leeds*; Fletcher and Co. *Cambridge*; Berrow *Worceſter*; Teſſeyman *York*; Froſt and Co. *Chelmsford*; Wiſe *Southampton*; Collins and Co. *Saliſbury*; Wood *Shrewſbury*; Mather *Hertford*; Saint *Newcaſtle*; Carnan *Reading*; Whitworth *Harwich*; Whittingham *Lynn*; Atkinſon *Southminſter*; Shave *Ipſwich*; Keymour *Colcheſter*; Smith *Marlbro*; Williamſon *Liverpool*; Drewry *Derby*; Creſwell *Nottingham*; Leverett *Walden*; Cox *Wiſbeach*; and of P. Higly, Bookſeller, Henry-Street, *Dublin*, the ſole Agent for vending it in *Ireland*: And by reaſon of ſome counterfeit Bottles having been vended in the North, it is appointed to be ſold at Mr. T. Smith's Merchant *Edinburgh*; and by W. PERRY, at his PRINTING-OFFICE, TAYLORS' HALL, *Edinburgh*, and no where elſe in Scotland.

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F I N I S.

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The Solvent may be had in Bottles of 5 s. 6 d. 10 s. 6 d. and one Guinea, Wholeſale and Retail, of the Proprietor, S. PERRY, Argyle-Street, three doors on the right hand from Oxford-Street, where Letters are deſired to be directed: The following Perſons are alſo authorized to vend it in the Country, *viz.* Kempſton *Kettering*; Dawkins *Goſport*; Breadhower *Portſmouth*; Crutwell *Bath*; Crouſe *Norwich*; Meſſrs. Jobſons *Coventry*; Pearſon and Co. *Birmingham*; Pine *Briſtol*; Harrop *Mancheſter*; Goadby *Sherborn*; Lee *Lewes*; Smith *Canterbury*; Raikes *Glouceſter*; Jackſon *Oxford*; Pugh *Hereford*; Crutwell *Wokingham*; Monk *Cheſter*; Trewman *Exeter*; Wright *Leeds*; Fletcher and Co. *Cambridge*; Berrow *Worceſter*; Teſſeyman *York*; Froſt and Co. *Chelmsford*; Wiſe *Southampton*; Collins and Co. *Saliſbury*; Wood *Shrewſbury*; Mather *Hertford*; Saint *Newcaſtle*; Carnan *Reading*; Whitworth *Harwich*; Whittingham *Lynn*; Atkinſon *Southminſter*; Shave *Ipſwich*; Keymour *Colcheſter*; Smith *Marlbro*; Williamſon *Liverpool*; Drewry *Derby*; Creſwell *Nottingham*; Leverett *Walden*; Cox *Wiſbeach*; and of P. Higly, Bookſeller, Henry-Street, *Dublin*, the ſole Agent for vending it in *Ireland*: And by reaſon of ſome counterfeit Bottles having been vended in the North, it is appointed to be ſold at Mr. T. Smith's Merchant *Edinburgh*; and by W. PERRY, at his PRINTING-OFFICE, TAYLORS' HALL, *Edinburgh*, and no where elſe in Scotland.